

small air forces observer

vol. 19 no. 1 (73)
April 1995

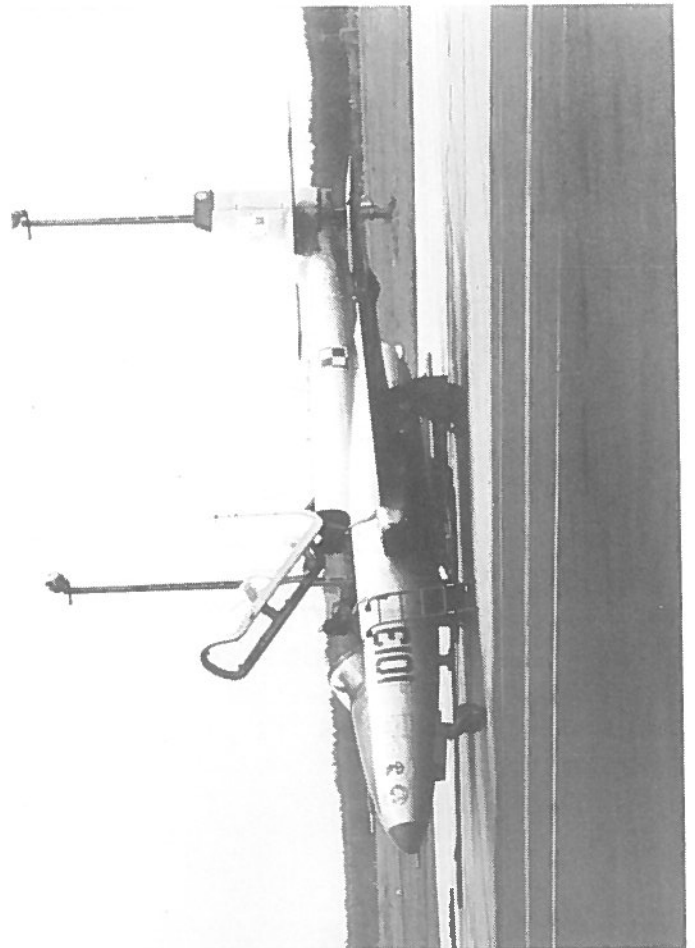
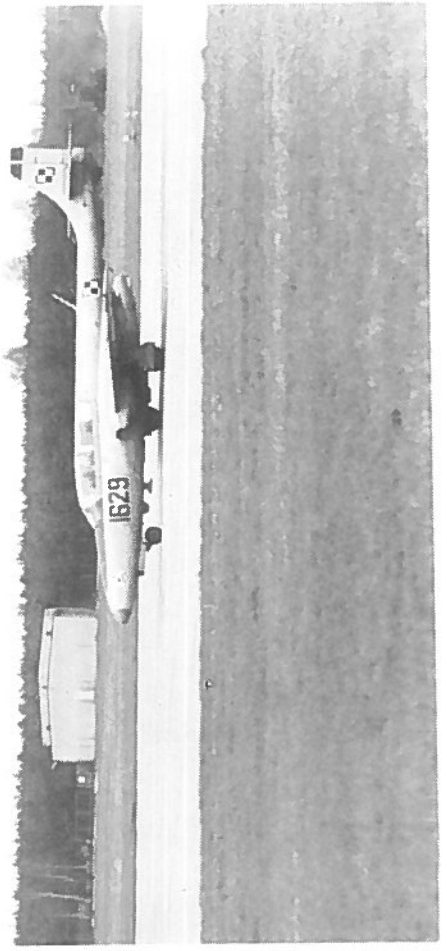
US \$3.50



LITTLE KNOWN AIR FORCES OF THE 1920s: Ethiopia & Morocco
CATALAN WOMAN PILOT OF THE SPANISH REPUBLIC
PARAGUAYAN AF: Grupo Aereo de Helicopteros
THE POLISH SPARK: TS-11 Iskra
BULGARIAN ALBATROS
ECUADORIAN T-41
BULGARIAN ACE

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SMALL AIR FORCES OBSERVER

The Newsletter of the Small Air Forces Clearing House

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SAFO EDITORIAL POLICY: The purpose of the SAFCH is to "promote interest in the history and modeling of the aircraft of the smaller countries". In support of this goal, the SAFCH encourages international cooperation in researching aviation history, both military and civil, from all periods of time, and for all the smaller countries. In return for this support, members are asked to submit occasional progress reports for publication in the SAFO. While the final results should appear in the most prestigious publication possible, it is requested that the SAFCH be mentioned (with address) in the article and that SAFO be afforded the opportunity of reprinting the material. Article published in SAFO can be reprinted provided permission of the author is obtained and the SAFO is identified in the reprint.

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please specify which issues are desired. Send remittance to Jim Sanders, 27965 Berwick Dr., Carmel, CA 93923 USA.

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LOST MEMBERS: Anyone knowing the whereabouts of the following 'lost' SAFCH members please inform the editorial office (last known address included): E. Tronn, Montreal, PQ Canada; Alain La Pierre, Maracay, Venezuela; Michael Parr, Prince George, B.C. Canada; Richard Harrison, Stroudsburg, PA; Ellis Estes, Alexandria, VA. Gary Lepinski, Minneapolis, MN; Claus Dam, Snaerildvej 41 F, DK-8300 Odder, Denmark; Doug Dildy, PSC 75 Box 675, APO AE 09719;

-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-

"During WWII, the British training program that included the recruitment of blacks from the British territories of Jamaica, Trinidad, and other West Indies islands. These blacks were trained in Canada and in Britain to fly Spitfires, Hurricanes, and Lancasters. There weren't many of them. Since I wanted to do a series of models on this subject, I've corresponded with museums and military departments in Britain. Unfortunately, while they were able to confirm the existence of such flyers, they could not provide any information on squadron, markings, photos, etc. I hope some of our readers might have know where information on this subject might be obtained."

Dwayne Holt (SAFCH #1396), 432 Brasswood Court, Santa Clara, CA 95054, USA.

"Does anyone have information on the camouflage pattern, colors, and markings carried by the Austrian AF Ju-86 immediately prior to the German takeover in 1938? I've seen only one poor-quality photo, from which it would seem that the expected standard German segmented scheme was not carried."

P.A. Brown (SAFCH #1397), 40 Berkley Ave., Waltham Cross, Herts., England EN8 8DW.

"The Grumman Albatross Aircraft Research Project: Between 1947 and 1961, the Grumman Aircraft Corporation of New York built 466 model G64/G111 Albatross amphibians. In the years since it's first flight, the HU16 Albatross has served with great distinction in the humanitarian air-sea rescue role with the United States Air Force, United States Navy, and United States Coast Guard plus the air arms of 20 other nations. From the late 1970's, following military service, over 100 aircraft

have carried civil registrations of 6 countries. The purpose of this research project, started over 20 years ago, is to record ALL available data and photographs on every Albatross built. Much has been achieved and over 1700 slides and prints collected along with many individual aircraft histories. However, in the areas of early deployment by the USAF and US Navy (1948/1960) and with the more rare and obscure air forces of the world, there remain many gaps in the story of this outstanding aircraft. Can you help? I am always pleased to obtain written or photographic material on individual Albatross history, however seemingly insignificant. I will reply to all contacts and will purchase slides or prints new to this indepth project. Historical research is of course an open field and my files are available to serious enquires and data exchange."

Jack M. Friel (SAFCH #1403), DAVEAN, Upper Warren Ave., Caversham, Berks, RG4 7EB, England

"I have modified a Fokker C-VB vacuform kit to a Fokker C-IVB. Since most of these went to the Soviet Union in 1924, I would like to know what colors were used. Other Soviet types of this era were light or medium green, but also yellow. I would also like to know the colors of Soviet D-VIIs and D-XIs, if possible."

Ariel Williams (SAFCH #1367), 431 So. 1350 E, Fruit Heights, UT 84037, USA.

"Recently I received from Squadron/Signal Publications a contract to write seven new books in their "Mini In Action" series. The following a/c types will be covered: Heinkel He 70 Blitz, Heinkel He 100/113, Junkers Ju 86, Focke-Wulf FW 58 Weihe,

PZL P-11 & P-24, PZL P-23 Karas, and PZL P-27 Los. I would like to invite SAFO readers to contribute with data, information, and, above all, photos. Obviously, all contributions will be acknowledged, the source of photos will be mentioned as requested, and the contributor will receive a free copy of the book."

Denes Bernad (SAFCH #1315), 1265 Davenport Rd., Toronto, Ontario M6H 2H2, Canada.

"I've recently received one copy of the book on the Serbian Air Force 1912-1918. This book consists of 262 pages, 32 color profile drawings, many drawings of aircraft, maps, and plenty of b&w photos. The text is in Serbian, but there is a 5-page summary in French. I will sell this book for US \$45.00, or exchange for 'Wings of China: Serie 1' (\$24.95) and 'Serie 2: Chinese AF in Action' (\$17.50)."

Pascal Faucard (SAFCH #571), 31C Avenue des Pres le Roi, 18230 Saint Doulchard, France.

"I am looking for the standing pilot figure from the Frog Trailblazers kit of the Bristol 138. Will buy or trade for information on Luftaffe and Greek subjects."

John Gallaspy (SAFCH #955), PO Box 2254, Hawthorne, CA 90251, USA.

"I would like to hear from anyone having photos and 3-view drawings of the following two helicopters: (1) Fairchild Hiller Model FH-1100 and (2) Cessna Skyhook H-41."

Jorge Delgado (SAFCH #862), PO Box #2207, Urdesa, Guayaquil, Ecuador.

AUSTRALIA

AUSTRALIAN PLASTIC MODELLERS ASSOCIATION (APMA, PO Box 51, Strathfield, NSW 2135; 4 issues sea mail A\$27; air mail A\$30). 4/94 (32 pages) "Nocturnal Mystery Spitfire" one page including a side-view drawing. "Laminations" [Editor's note: Not Laminations.] 4 pages on scratch building wings. "Trubble (sic) in the Bubble" 5 pages on modeling the Bell 47. "Fokker F.VII Series & Derivatives: Part 2" 3 pages including drawings of F.VIIb/3m 'PK-AFC' and Avro Ten 'VH-UNJ'. "Magyar Kiralyi Legiero" 5 pages including 14 side-view drawings (Bf-108, He-112, Bu-131, B-534, FW-56, Ju-87B, CR-42, Potez 53.11, Ar-96B, Ju-52, CR-32, Re-2000, Fi-156, & FW-189; the CR-32 carries mixed markings with both white cross and chevrons - unfortunately, no plan views).

NEWS AND VIEWS (IPMS NEW SOUTH WALES, PO Box 637, Broadway, NSW 2007; 4 issues A\$30.00 air mail).

11/4 (32 pages) "Bluenosers" 6 pages on 352 FG Mustangs including 15 photos and 9 side-view drawings. "RAAF Pilots in RAF Squadrons: Part 6" 4 pages including 5 side-view drawings (3 Spitfires & 2 Hurricanes). "Maritime Mitchells" 10 pages including 8 side-view drawings and a page of sketches of maritime mods.

AUSTRIA

OFH NACHRICHTEN (Oesterrichische Flugzug Historiker, Pfenninggeldgasse 18/2/14, A-1160, Wien.)

4/94 (36 pages) "Douglas DC-3 OE-FDB" 10 pages including 7 photos and 2 side-view drawings. "Phoenix Flugzeugwerft Ges.m.b.H" 8 pages on the Phoenix L2/c Meteor including 3 photos and 9 side-view drawings. "Yak-18" 4 pages including 3 photos and a 4-view drawing of Austrian a/c.

BELGIUM

KIT (IPMS Belgium, Te Couwelaarlei 103 bus 21, B-1200 Deurne/Antwerp; 4 issues US \$25 in cash, International Postal Money Order for 750 BF, or American Express IMO for US \$25; add US \$5 (or 120 BF) for airmail. Please specify French or Dutch edition).

#94 2/94 (32 pages) "Westland Sea King Mk 48" 9 pages including 12 photos and a 4-view drawing of Belgian a/c. One-page 2-view drawing of Belgian HSS-1. One-page 2-view drawing of Belgian Alouette III in UN markings. "Le Boeing KC-135A Startotanker: Part 2" 7 pages including 8 photos and color front cover photo of Belgian F-16s refueling from a USAF C-135.

BRAZIL

EM ESCALA (IPMS Brazil, Rua Arquias Cordeiro, 316 S/502, CEP 20770, Meier, RJ. Subscription is \$10.00, but they prefer kits or accessories. Send to Antonio Pereira Linhares at the above address.)

2/94 (20 pages) "Os Douglas DC-6B/C-118 Liftmaster de Forca Aerea Paraguai" 2 pages including 3-view drawing. "Brazilian Waco CSO" 2 pages including 4-view drawing of '1-D-8' on floats and a side-view drawing of 'C6' on wheels. "A Bulgarian Albatros" 2 pages including 3-view drawing and one photo.

CANADA

RANDOM THOUGHTS (IPMS Canada, Box 626,

Stn. B, Ottawa, Ontario K1P 5R7; 6 issues for US \$20.00 in US \$22.00 elsewhere).

23/6 (24 pages) "A-26 Invader" 2-page review of 1/72-scale Airfix and 1/48-scale Monogram kits. "FW-200 Condor" one-page review of Revell kit. "MPM Polikarpov I-153" 2-page review of 1/48-scale vacuform kit. "Canada's Greatest Ace: Captain W.A. 'Billy' Bishop" 2 pages on building Bishop's Nieuport 17 in 1/72-scale.

ECUADOR

PLASTI MODELISMO (IPMS-Ecuador, Casilla 09-01, 9901 Guayaquil)

#2 July '93 (20 pages) "Los Prieros y los Ultimos" 5 pages including 3 photos and two 3-view drawings of Ecuadorean F-47Ds. "Kfirs: Ecuador & Colombia" 5 pages including 3 photo and two drawings of uppersurface camouflage patterns (different for the two countries).

ENGLAND

IPMS MAGAZINE (Ernie Lee, 51 Ball Road, Hillsborough, Sheffield, South Yorkshire S6 4LZ, 6 issues for £20.00 (US subscription agent: Wise Owl Publications, 4314 West 238th St., Torrance, CA 90505; since exchange fluctuates write Joe for current rates).

6/94 (40 pages) "Falco" 2 pages on correcting the Revell kit including sketches and 3 photos of completed model. "Ju88 G-6 Nachtjager" 3-page review of Dragon kit including 5 photos of completed model.

PLASTIC KIT CONSTRUCTOR (PAMAG (Publications) Ltd., 3 Lowfield Court, Old Forge Business Park, Sark Road, Heeley, Sheffield, S2 4HG; 4 issues £ 18.00. In USA/Canada order from J.J. Daileda, 4314 West 238th St., Torrance, CA 90505; since exchange rates fluctuate write Joe for current rates).

#40 (32 pages) "Victor Described" 3 pages including 10 photos. Lots of kit reviews including the 1/72-scale vacuform Gotha GL VII by Seria Models finished in Ukrainian markings.

#41 (32 pages) "Sketch Pad: Spanish CN-235" one-page of sketches. "Hispano HA-1112" one page with 4 side-view drawings (Spanish and "Battle of Britain" film). "Blackburn B-2" 2 pages including 9 photos and small 3-view drawing. "Scottish Aviation Twin Pioneer" 5 pages including one-page history, 4 photos, and review of Hallam kit with sketches of interior. "MH-53J Pave Low 11E Super Jolly Green Giant" 3 pages including 13 photos. And, 27 reviews of kits; reviews of decals, etc.

FINLAND

MALLARI (IPMS Finland, PL 798, 00101 Helsinki 10; 6 issues \$20.00, no check accepted due to the high redemption costs).

6/94 #104 (26 pages) "MiG-21bis" 18 pages on Finnish MiGs including 2 color photos, 16 b&w photos, 4 pages of 1/48-scale plans, one 4-view drawing, and 4 side- & top-view drawings.

SUOMEN ILMALUHIHISTORIALLINEN LEHTI (InScale 72, Makelankatu 5B10, 00550 Helsinki; Europe \$25, elsewhere \$30; payment by International Postal Order or in cash; no cheques of any kind accepted because of high redemption rates). Each issue includes a 2-page English summary.

4/94 (20 pages) "Hanssin-Jukka: 60 Years" 5 pages including 6 photos and 2 side-view drawings of famous Finnish Douglas DC-2. "Anson in Fin-

land" 4 pages including 5 photos of civil Anson and 4 side-view drawings (2 civil & 2 military). "Crash Landing of Junkers Ju 52 OH-ALK" 2 pages including 5 photos and one map. "W/O V.I. Samarin and PE-301" 2 pages including 3 photos and a side-view drawing of Finnish AF Pe-2.

1/95 (24 pages) "Saksalaiset 'Lappia' Tuhoamassa" 2 pages including 4 photos on the mistaken attack on DH.89A Dragon Rapide OH-BLB by a German 109. "Praga Babyjen Raaka Kohtalo" 5 pages on Finnish use of the Praga Baby including 6 photos, 1/72-scale 5-view drawing (w/ cross sections), and page of side-view drawings. "Valkoinen Harmaaksi" 4 pages on experiments to tone down the white in the Finnish national insignia including 2 photos (Gladiator & Bf-109) and a page of tone drawings of Blenheims. "Luftwaffe Suomesa" 7 pages on activities of 1.(H)/32 in Finland including 4 photos (FW-189 & Hs-126). "BW-355 Noka" 3 pages including 7 photos of Buffalo and victory list.

FRANCE

AVIONS: Toute l'Aeronautique et son Histoire (39 rue A. Briand, 62200 Boulogne Sur Mer, France. 420F for 12 issues).

#21 Nov 94 (52 pages) "L'Aero L-29 Delfin: 3eme partie" 6 pages including 2 pages of 1/72-scale of scale drawings and 6 color photos (Bulgarian & Czech). "Le Fokker T-IV: 1ere partie" 10 pages including 17 photos, color side-view drawing, color cover painting, and 4 pages of 1/72-scale drawings. "L'Amiot 143: 3eme partie" 11 pages including 26 photos, 2 pages of 1/72-scale drawings, and a 2-page cutaway drawing. "Immelmann l'Aigle de Lille et les Monoplans Fokker: 1ere partie" 3 pages including 3 photos. "L'Avia B.135: 1ere partie" 5 pages including 10 photos (Czech, German, & Bulgarian) and 2 pages of 1/72-scale drawings. "Des Canadiens contre les Japonais dans le Pacifique Nord" 8 pages including 11 photos and 3 color side-view drawings (Shark & Stranraer). "Junkers Ju88 C6: Maquette AMT/ERTL au 1/72eme" 3 pages including 10 color photos of model.

#22 Dec 94 (52 pages) "Des Canadiens contre les Japonais dans le Pacifique Nord" 7 pages including 15 photos and color cover painting. "L'Aero L-29 Delfin: 3eme partie" 2 pages including one color photo (Slovakian) and 5 photos (Soviet, Bulgarian, & Hungarian). "Le Zephyr c'est Fini" 3 pages including 7 color photos. "Douglas RB 66B: Maquette Italeri au 1/72eme" 3 pages including 9 color photos of model. "Le Fokker T-IV: 2eme partie" 11 pages including 27 photos, 4 pages of 1/72-scale drawings, and a 2-page cutaway drawing. "L'Avia B.135: 2eme partie" 4 pages including 13 photos (Bulgarian) and a 2-page cutaway drawing. "Immelmann l'Aigle de Lille et les Monoplans Fokker: 2eme partie" 4 pages including 7 photos. "Incidents Aeriens en Belgique pendant la Drole de Duerre: 1ere partie" 3 pages including 7 photos. "L'Amiot 143: 4eme partie" 8 pages including 14 photos, 2 pages of 1/72-scale drawings, and one color side-view drawing.

#23 Janvier 95 (52 pages) "Le Mirage F-1: 1ere partie" 6 pages including 17 photos of French a/c. "L'Aero L-29 Delfin: 4eme partie" 2 pages with 3 color photos of Bulgarian a/c in new national insignia. "Les Farman F.220 a F.224: 1ere partie" 6 pages including 17 photos and color cover painting. "Incidents Aeriens en Belgique pendant la Drole de Guerre (Sept 39 - Mai 40)" 4 pages including 11 photos and table of a/c brought down in Belgium and Holland. "Les Vickers Vildebeest Espagnols" 8 pages including 11 photos, 2-pages of 1/72-scale

drawings, and a 2-page cutaway drawing. "Des Canadiens contre les Japonais dans le Pacifique Nord" 4 pages including 12 photos. "L'Amiot 143: Seme partie" 3 pages including 9 photos and one color side-view drawing. "Les Premiers Chasseurs Gourdou-Lesurre: 1ere partie" 3 pages including 13 photos. "Le Spad XII Canon: L'Avion des As: 1ere partie" 3 pages including 11 photos and one color side-view drawing. "Maquette: Bohm und Voss BV 141 Maquette Karo as Thermoformee au 1/48eme" 3 pages including 10 color photos of model.

#24 Mars 95 (52 pages) "Depart du Detachement Francais pour Red Flag 95/02" 2 pages including 5 color photos. "Le Mirage F1: 2eme partie" 8 pages including 10 color photos and a 2-page cutaway drawing. "Les Farman F.220 a F.224: 2eme partie" 6 pages including 21 photos. "L'Amiot 143: 6eme partie" 3 pages including 5 photos and a listing of all 138 a/c. "Les Vickers Vildebeest Espagnols: 2eme partie" 7 pages including 14 photos, 2 pages of drawings, and 4 color side-view drawings. "Les Premiers Chasseurs Gourdou-Lesurre: 2eme partie" 5 pages including 10 photos of French a/c and a color cover painting of an Estonian a/c. "Le Spad XII Canon: 2eme partie" 5 pages including 10 photos, 1/72-scale 5-view drawing, and a color side-view drawing. "Le Tupolev ANT-25" 5 pages including 10 photos and a color 2-view drawing of URSS N025. "Le Boeing 314 Clipper: Maquette Airfix au 1/144eme" 2 pages including 4 color photos of diorama.

GERMANY

MITTEILUNGEN (IPMS Germany, Bergengruenstrass 5-7, D-1000 Berlin 38; 12 issues DM 60.00 Europe, DM 65.00 USA, DM 70.00 Japan, DM 75.00 Australia).

5-94 (40 pages) "Hauptmann Werner Machold" 6 pages including 9 photos and drawings of Machold's 109E.

6-94 (40 pages) Photos: Romanian Klemm L25 'YR-ARU' and one military.

1-95 (40 pages) "Die Re.2005 im Dienste der deutschen Luftwaffe" 3 pages including one photo and 3-view drawing.

GREECE

NEA (IPMS-Greece, PO Box 79167, 175 05 Amfitea, Athens) 4 issues \$25.00 for first year, \$20.00 for next year. Includes English summary.

2/94 (32 pages) "The Ardmore Warbirds" 6 pages with 11 color photos of a/c preserved in New Zealand. "Hellenic Stinson L-5C Sentinel" 2 pages including one photo and drawings of a/c in Greek AF markings. "Cyprian Air Force PC-9 Pilatus" 5 pages including 5 color photos, 3 b&w photos, and side- & top-view drawings.

3/94 (32 pages) "Phantom II: 20 Years in Hellenic Air Force Service" 20 pages including 11 color photos, 17 b&w photos, and table of individual a/c. [Editor's note: Color used on Greek Phantoms are identified by FS595 equivalents. Of particular interest is that the blue of the Greek national roundel was applied in several different shades - FS25182, FS15044, or FS15102.]

ITALY

IL NOTIZIARIO (IPMS Italy, CP 182, 41100 Modena Ferrovia; one year 50,000 Italian Lira in Europe or US \$50.00 overseas).

3-4/94 (40 pages) "Bestetti-Nardi BN.1" 5 pages including 5 photos, 1/72-scale 3-view drawing, and sketches on scratch building this unusual twin-fuselage a/c. "Un T-6 e tre T-33" 8 pages including

10 photos and side- & plan-view drawings of Italian T-6H, T-33A, RT-33A, and Belgian T-33A. "Fiat-Aeritalia G-91R: Ultimo Volo" 4 pages including 6 photos and 4-view drawing.

JP-4 (JP-4, CP 1550, 50100 Firenze; L 27.000 Europe, L 30.000 elsewhere).

7/94 (98 pages) Color photos: Spanish OV-10 'AE-020' and German Mi-8T '93+03'. "Un Grifo sul Mediterraneo" 6 pages including 8 color photos of Guardia di Finanza P.166.

10/94 (98 pages) Color photos: Russian An-12 'RA-11868'; Dutch F-16A 'J-251' in commemoration paint scheme; Argentine FMA IA.50A 'LQ-MBS'; Hungarian AF Zlin 43 '076' in chevron insignia; and Chilean AF CASA C-212/300 '966'. "Le Lunghe Ali di Mosca" 8 pages including 11 color photos of Soviet bombers (DB-3, Tu-4, Tu-16, Tu-22, & Tu-95).

11/95 (116 pages) Color photos: Ukrainian An-12 'UR-11315'; German "Tiger" Tornado; Brazilian F-5B '4804'; South Korean P-3C; Greek S-70B; and Cuban An-2 'CU-A 965' in Florida. "B&B: Black-jack e Backfire" 6 pages including 8 color photos. "La Flygvapnet Oggi" 7 pages including 10 color photos of the Swedish AF today. "Difendendo il Cuore dell'Africa" 4 pages with 6 color photos of Zimbabwe BAC Hawks carrying new national roundels (from outside in - green, yellow, red, black, white).

12/94 (116 pages) Color photos: Russian Il-76T in UN markings; Yugoslav Boeing 737; Kazakhstan Yak-42 'UN42446'; Croatian MiG-21 in camouflage with new insignia and UTVA 75 '0014 BRG'; German Hansa Jet '16+21'; and Slovak An-12 '2209'. "AV.ES. il Rilancio dell'ala Fissa" 5 pages including 9 color photos of Italian Army a/c (Do-228 & SM.1019 - two of the latter in UN markings). "Un Veterano Prestigioso" 6 pages including 8 color photos of the RAF's last Camber-ras. "Il Mito del 'Manico'" 7 pages including 11 photos (from Ni-11 to Vampire) on the 'myth of the sergeant pilot'.

1/95 (116 pages) Color photos: Slovak Boeing 727; Portuguese F-16B '15120'; and Slovak Su-25 & Ukrainian Su-27 tails. "Il Canadian Air Command Oggi" 8 pages including 12 color photos (CF-118 in 'invasion stripes'). "Un Team Regale" 5 pages including 6 color photos of Jordanian acrobatic team's Extra 300 and Pitts S-2A. "Offresi Piattaforma Tut-tofane" 7 pages including 13 color photos of Myasishchev M-17 Mystic. "Cacciatori della Notte" 7 pages including 12 photos (some in color) of Italian night fighters (Me-110 & D0-217).

PARAGUAY

MODELO TERAPIA (Antonio Luis Sapienza, PO Box 2721, Asuncion, Paraguay. US \$2.00 per issue).

2/4 (7 pages) "Maquetas Paraguayas: El Mil Mi-8" 2 pages including side- and bottom-view drawings of a/c used by the Policia Nacional Paraguaya, 1994. "Maqueta del Mes: El Junkers Ju.52/3M en la Fuerza Aerea Colombiana" 3 pages including side- and top-view drawings of 6 a/c carrying 3 different national insignia.

2/5 (6 pages) "Maquetas Paraguayas: Caproni AP-1" 2 pages including 3-view drawing. "Maqueta del Mes: El Northrop F-5E/F FAB" 2 pages including 4 side-view drawings of Brazilian a/c and drawings of 3 Esquadrao insignia

2/6 (7 pages) "Maquetas Paraguayas: El British Aerospace Jetstream Super 31" 2 pages including 3-view drawing of 'ZP-CNP'. "Maqueta del Mes: El AT-6F 'KN-1'" 2 pages including 3-view drawing of South Korean AT-6 on floats. "El Beech Mentor de las Armada de Mexico" one-page 3-view draw-

ing.

2/7 (7 pages) "Maquetas Paraguayas: DHC-2 Beaver" 2 pages including 3-view drawing of Fuerza Aerea Paraguaya a/c. "Maqueta del Mes: B-25 en la Fuerza Aerea Uruguaya" 3 pages including 4 side- and one plan-view drawings. "El Periplo del Hidroavion Junkers W.34 Bolivar" 2 pages including small side-view drawing of a/c in Venezuelan markings.

2/8 (6 pages) "Maquetas Paraguayas: Boeing 737 of Air Paraguay" 2 pages including 3-view drawing. "Maqueta del Mes: AT-6 de la Fuerza Aerea Brasileira" 2 pages including 3 side-view drawings. "Techicas: Convierta su F4U-1 Corsair" 2 pages including drawings of a RN Corsair I and a USN F4U-2.

POLAND

FANATYK PLASTIKU (Marek Bronkowski, Slowackiego 4, Sandomierz.)

#13 (32 pages) "Samolot Asa: Marseille" 4 pages including one plan-view & 3 side-view drawings and details of rudder markings. "Henschel Hs 126 z Plastik" a 2-page comparison of available kits. "Epitafium dla Jedego Lim'a" 2 pages including 2 photos and 3-view drawing of camouflaged Lim-6bis. "Mig-29 w Deblinie" 4 pages including 15 photos of details and plan-view drawing of camouflage pattern. "RWD-9 Konwersja" one page including drawing. "Malowanie i Oznakowanie Polskie MiG-21" 4 pages including 17 side-view drawings.

#14 (32 pages) "Saab 105 w Austrii" 6 pages including one photo and 5 pages of drawings. "Malowanie i Oznakowanie P-40N RAAF" 3 pages including 10 side-view drawings and 2 paint chips. "Mi-28 z Plastik" 3 pages including 4-view drawing and sketches. "PZL Sokol" 3 pages with 12 photos of interior and 2 color photos of a/c.

USA

WWI AERO (15 Crescent Rd., Poughkeepsie, NY 12601; 4 issues \$25.00 USA or \$30 overseas).

#147 (146 pages) "Bell Kites" 6 pages including 11 photos. "The 1908 Coads-Joachim-Caproni Glider" 2 pages including one photo. "In Search for an Airship Engine: Part 1" 9 pages including 3 photos and sketches. "The Wright Stuff IVd: US Navy Model B Hyros" 9 pages including 15 photos. "Aircraft of Mexico" 9 pages including 14 photos on Serie A Biplane. "Curtiss Orioles" 7 pages including 16 photos and 3-view drawing of reproduction.

SKYWAYS (15 Crescent Rd., Poughkeepsie, NY 12601; 4 issues \$25.00 USA or \$30.00 overseas.)

#33 (84 pages) "Gwinn Aircar" 7 pages including 8 photos and a 3-view drawing. "New York Hospital for Antiques" including 9 pages and 25 photos. "Bulgarian Aircraft Industry 1924-1945" 16 pages including 18 photos and scale drawings of KB-2A, KB-3, KB-5, & DAR-10A. "Messerschmitt Taifun" 8 pages including 11 photos of details. "First Sikorsky S-38s" 6 pages including 7 photos. "Dornier Do.A Libelle" 4 pages including 5 photos and two 3-view scale drawings. "Questioning the Question Mark's Question Mark and Other Fokker Trimotor Markings" 3 pages including 7 photos.

PRI-FLY (IPMS Washington DC, c/o Carol Fleckenstein, 13816 Choptank Ct., Centreville, VA 22020; 4 issues \$8.00 for US, \$9.00 all others).

#89 (16 pages) "MiG-15bis Fagot" 2-page review of Dragon kit including 2 side-view drawings. "Aircraft of the Aces: Adriano Visconti's Macchi C.205" 2 pages including a page of drawings.

Aerei and Aerei Modellismo 1993-1994 Roundup

This is the usual annual round-up of the small-airforces items appeared in the Italian magazines "Aerei" and "Aerei Modellismo" in the period September 1993 to December 1994. Those interested in obtaining back issues or subscription can contact the publisher: Delta Editrice, CP 409, Borgo Regale 21, 43100 Parma. The current subscription rates are: Aerei 84,000 lire and Aerei Modellismo 77,000 lire. The cost of a back issues is: Aerei 12,000 lire (issues available from 1991 on) and Aerei Modellismo 12,000 lire (issues available from 1992 on, plus five 1991 issues).

Aerei

September '93: Color photos of Pakistani F-16, Belgian Agusta A-109, and Dutch F-16 & F-5; an article on the new Swiss BAe Hawks with 7 color photos; an article on the Italian mission in Albania with 9 photos of Albanian MiG-17, MiG-19, An.2, Il.14, & MiG-15UTI; an article on the 1943 Italian campaign with 13 photos and 2 color drawings of Italian Mc.200, Cant. Z 1018, Re.2000, SM.79, G.55, etc.

October '93: Color photos of Gripen, Belgian F-16, Portuguese A-7, and Brazilian AMX; an article on the French participation in Red Flag 93/2 with 6 photos and a color drawing of Mirage 2000; an article on Italian Air Force's 180 Gruppo with 9 photos of F-104S, HH-3F & SIAI S.208; an article on the 1973 Arab-Israeli war with 6 photos of Israeli aircraft; an article on the Dutch Soesterberg Museum with 9 color photos of its various exhibits (Spitfire Mk.VIII, Sea Hawk, C-45, Fokker D-XXI, D.VII, S.11, S.14 & C-47).

November '93: Color photos of F-5Plus prototype in Israeli markings, Nanchang K-8 trainer, Spanish AV-8A, and Italian Atlantic in special markings; an article on the French training academy with 13 color photos of Alpha Jet, Magister (one in Tiger-Meet stripes), CAP 10, CAP 231; two big color photos featuring a Dutch Texan and F-16 formation; an article on the new Caproni Museum in Trento with 4 color photos of Ca.100, Breda 19, SM.80, Ca.193.

December '93: Color photos of Italian Tornado and MB.339 in low-viz camo; an article on Italian Navy's air base at Luni with 9 photos of AB-212ASW and SH-3; an article on the T-33 with 11 photos (Columbia, Canada, Italy, Portugal) and a giant color drawing of a Canadian T-33; an article on a recently restored T-6 with 6 color photos of the aircraft in Italian markings; a photo of the French Deltavieux jet prototype.

January '94: Color photo of a Spanish Mirage F-1 in overall light grey; an article on the 46a Brigata Aerea, the Transport Wing of the Italian Air Force, with 7 color photos of C-130, G-222 and C-119; an article on the Italian Aerfer Sagittario II jet fighter of 1956 with a color profile and a b&w photo.

February '94: Color photos of Czech L-39 and MB.339 with IFR probe; an article on the Italian 60 Stormo with 7 color photos of Tornados; an interesting article on the OV-10 Bronco in Venezuela with 6 color photos (including a B-25 in Venezuela markings).

March '94: Color photos of Brazilian BAe.125, Saab Viggen (2), Turkish RF-4E, Italian AMX, and Malaysian F-5E/RF-5E; an article on the Italian

Air Force 50o Stormo with 8 color photos of their Tornados; 4 color photos of a recently recovered SM.79 in Lebanese markings.

April '94: Color photos of Yugoslav J-1 Jastreb and G-4 Super Galeb, and Taiwan F-86F; an article on the F-86 with 4 photos of Italian aircraft.

May '94: Color photo of Italian AV-8B Plus; an article on the Italian Army Aviation with 17 color photos of A.129, SM.1019, AB.206, A.109 and O-1; an article on the Swiss Air Force Museum with 7 color photos of Vampire, Mustang, MS.406 (Swiss version), Bf.109E, P-16, and N-20 prototypes; an article on the New Zealand Air Force with 6 photos of Strikemaster, A-4 Kahu, HS Andover, C-130, and MB.339.

June '94: Color photo of Swedish Saab 340 AEW, Dutch Hercules, Iranian F-4 (3 photos); an article on the 1st Regiment of the Italian Army Aviation with 8 photos of CH-47, AB.412, SM.1019, Do.228; an article on South African air museums with 7 photos of Mirage IIICZ, Puma, C-47, Buccaneer.

July '94: Two color photos of Italian Navy TAV-8B; two color photos of Pakistani Atlantic; an article on supersonic flight including 5 color photos of Italian F-104; an article on the Piaggio P.108 WWII heavy bomber with 7 b&w photos, a cutaway, two color profiles, and a small three-view.

August '94: Color photo of Chilean CASA Aviojet; two color photos of Italian AMX; an article on the Italian Air Force Flying Academy with 11 color photos of MB339 and patches; an article on Italian Carabinieri Air Service with 6 photos of A.109, AB.206, and AB.412 helicopters.

September '94: Color photos of Italian Navy first AV-8B +; a long article on Italian Navy helicopters with 9 color photos of AB.212 and SH-3; an article on the F-84F, with 6 photos of Italian aircraft; an article on the closing stages of WWI in Italy with 7 photos and 4 color profiles of Italian aircraft of the period (G-55, Re.2002, Me.109, Baltimore, Spitfire).

October '94: Color photos: Italian AB.205, Dutch AB.412, Slovak MiG-29UB, Spanish TAV-8A, Czech Mil-24, Swedish Draken; an article on the Saab 32 Lanser with 7 color photos; an article on the Italian Air Force's 213o Gruppo with 7 color photos of MB.339 in low-viz grey camouflage.

November '94: Color photos: Saab 340 AEW prototype, Rooivalk helicopter, Singapore C-130, Spanish CN-235; an article on the Dewoitine 520 fighter with 4 photos (two in Italian markings) and a color drawing (in Italian markings).

December '94: Color photos: Saab Gripen, Belgian RF-84F; a long article on the new Croatian Air Force with 9 color photos (MiG-21, UTVA-75, Mil 24, Mil 8); an article on the last G-91Y in the AMI with 7 color photos; an article on the Spanish Fighter Pilot School with 9 color photos of their F-5B. This issue contains some very interesting photos of Croatian MiG-21 bearing a new camouflage and insignia: green and tan upper surfaces, light grey undersurfaces, the usual red-and-white checkerboard Croatian insignia on the tail surfaces, and a blue circle with two red squares on the rear fuselage and upper left wing (also on lower right wing?). There is some black detail on the red

squares, but it is not decipherable as the photographer was too far away from the airplane. There is no serial number, but the aircraft bear the black medieval helm with number "1" previously seen on Croatian MiG-21s.

Aerei Modellismo

September '93: A review of every Tornado kit on the market with color references for Italian aircraft; modelling an Iraqi MiG-21 from the 1/48 OEZ kit and Superscale sheet 48-385 including a color three-views drawing; an article about converting the Hobbycraft 1/48 Spitfire Mk. XIV into a PR.XIX recce version.

October '93: A review of every kit of the Aermacchi MB.326 with color references to Italian aircraft.

November '93: A review of some Me.109 kits limited to the versions that served in Italy (F, G, K) with color references for Italian aircraft (identical to German schemes).

December '93: A review of the Italeri 1/72 C-119 kit, with color references for Italian aircraft.

January '94: A review of every kit of the Macchi MC.202/205 fighters with color references to Italian aircraft and two color profiles.

February '94: A review of every kit of the T-6 with color references for Italian aircraft.

March '94: A review of every kit of the Aermacchi MB.339 trainer with color references to Italian aircraft and a giant color drawing of a Freccia Tricolori aircraft.

April '94: A review of the Pegasus kit of the Macchi/Hanriot HD.1 WWI fighter with color references to Italian aircraft.

May '94: A review of the Airfix and SMER kits of the SM.79 Sparviero with color references for Italian aircraft and a giant color drawing; an article on Italian WWII color schemes with samples keyed to color references and 3 color photos of MC.200 and MC.202.

June '94: An article on the SIAI SF.260 with color references; 7 detail photos of the AMX.

July '94: A review of the Heller and Karo-As kits of the F84G with color references for Italian aircraft; an article on Russian ejection seats with 7 photos and two drawings.

August '94: A review of the Supermodel and SMER kits of the Fiat CR-32 with color references for Italian aircraft; modeling an Italian Canadair Sabre from the 1/48 Monogram kit.

September '94: An article on modelling the SAI Ambrosini 403 Dardo light fighter of WWII from the Polish Modelland 1/72 vacuum kit.

October '94: 5 color photos of the Macchi 200 fighter; a review of F-84F kits with color references for Italian aircraft.

November '94: A review of the two Macchi MC.72 kits with color references; a color photo of a Canadian F-18.

December '94: An article on building the Revell 1/72 Gripen kit; 6 detail photos of Italian Navy AB.212ASW; a long article detailing all the C-47 variants that served in the Italian Air Force; an article about modeling a French B-26 Invader from the 1/48 Monogram kit.

Mario Bartoli (SAFCH #719), via R. Fucini 48, 56127 Pisa, Italy.

-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-

"Desperately needed for research project: Photos of C-84 42-57511. This a/c was frequently used as a VIP transport. I've already asked the British Dakota specialist without any luck. Does anyone know of Dakota specialist in either the US or

Canada?"

Kris Choloniewski (SAFCH #96), ul. Sabaly 21m30, 02-174 Warszawa, Poland.

[Editor's note: According to "United States Military Aircraft since 1909" by Swansborough and

Bowers, "The four aircraft of this type were 1937-model DC-3Bs impressed) 42-57157; 42-57511/13). They has Wright R-1820-71 engines and 28 seats."]

POLISH SPARK: The TS-11 Iskra

Dariusz Karnas

Development:

The introduction of jet-powered combat aircraft during the 1950s initiated interest in use of jet-powered aircraft from training purposes. Each aircraft manufacturer had its own vision of the best system for training pilots. Probably the most popular idea was an aircraft that would be able to fight and train. These aircraft were called "combat/trainers".

Combat trainers were to be light and easy to maintain. They were to be equipped with underwing and fuselage-mounted hard-points for armament, and they would have builtin machine guns or cannons. These aircraft had to combine training in basic aerobatics with the elements of combat manoeuvres such as ground and aerial target shooting and bombing. It was thought that the introduction of combat/trainers into air schools and combat units would replace all pistonpowered aircraft thereby improving the process of training pilots.

The idea of a light combat/training aircraft reached Poland and was the object of special interest to eng. Tadeusz Soltyk and his design bureau at Warsaw's Instytut Lotnictwa (Institute of Aviation - the IL). T. Soltyk had already designed such successful training aircraft as the "Zak", "Zuch", "Junak", and "Bies". In 1957, a design team began studies of proposed airframes while the engine department started work on an engine for the new aircraft.

In the late spring of 1958, after a long process of project evaluation, theoretical calculations, wind-tunnel testing on scale models, and building a full-scale mockup to help in the design of the cockpit interior and the locations of the equipment, the IL started construction on four prototypes. The first, marked 01 and destined for static test, was completed in March 1959. On 5 February 1960, the second prototype 02 made its maiden flight with eng. Andrzej Ablamowicz at the controls. This new aircraft was given the designation TS11 (TS = Tadeusz Soltyk) and was officially named Iskra (Spark).

The "02" prototype was powered by a Britishbuilt Rolls Royce Viper engine, and its first flights proved the aircraft fulfilled all the technical requirements. The use of a foreignmade engine in this aircraft, which was otherwise fully Polish, was caused by technical difficulties with design of the indigenous powerplant, the SO-1. The third and fourth prototypes, "03" and "04", were powered by the HO10 engine a licensebuilt version of the Rolls Royce RD45FA VKI. These aircraft were first flown in March (03), and July (04) 1961.

The 02 prototype carried no armament at all, but 03 and 04 each had a pair of underwing pylons, a 20-mm cannon, and a guncamera in the forward fuselage. These aircraft were used to test the performance, flight safety, ejection of the seats through closed and opened canopy, etc. The next step were the flutter trials which the prototypes passed successfully.

Along with research on the airframes, tests were conducted on the SO-1 powerplant with the goal of providing much better performances, particularly shortening the takeoff roll and the increasing the rate of climb. The efforts bore fruit by April 1964 when Iskra 03 was test flown with the SO1 engine.

The first official state trials of the TS-11 took place in early 1961. A commission consisting of members from the Wytwornia Sprzetu Komunikacyjnego (WSK = Transport Equipment Plant), IL, and the Ministry of National Defence found the Iskra

fulfilled all requirements. Furthermore, it was decided that the new aircraft was suitable for pilot training in the areas of elementary flying, aerobatics with elements of combat maneuvering, IFR flights, formation flights, and ground attack. So positive was their opinion that preparation began to start series production in 1962 at the WSK plant at Mielec.

The test flights of the first series aircraft (still powered by an HO10 engine) took place during summer 1963, and the first batch of Iskras was delivered to Air Force Officers Academy at Deblin in the summer of 1964.

The TS-11 was a tandem-seat configuration with the instructor occupying the rear seat with the pupil in the forward seat. This was supposed to help the pupil to trust in own abilities. To prevent accidents, the instructor was able to override the students actions. For example, the system for retracting the undercarriage or flaps could be operated from the rear cockpit against the student's will.

Series Production:

After series production of TS11 started in 1964, development was not stopped. On 26 June 1968, a prototype of a trainingassault variant was test flown. It had two additional underwing pylons for external armament and was designated "Iskra 100". However, when series production was started, it was redesignated TS-11 Iskra bis B.

Taking into consideration the requirements of the Wojska Lotnicze (Polish Air Arm), aircraft c/n IH0530 of the "bis B" version was converted into a prototype for the "Iskra 200 Art". This aircraft was to be used for close reconnaissance tasks and to collaborate with artillery. The controls were removed from the rear cockpit and the instrument panel was converted to a navigator's position. The aircraft was also equipped with three AFA 39 cameras. The series-produced aircraft are known as "Iskra bis C".

In 1972, the single-seat Iskra was built for operational training and close support of the ground forces. This aircraft was named "Iskra 200 BR". The test flight of the prototype with side number 0830 took place on 22 June 1972. The main differences between the "200 BR" and the basic version were the shortened canopy, builtin additional fuel tank (in former rear cockpit), and installation of another camera. This aircraft was powered by SO3B engine, an upgraded version of SO1. Only one Iskra 200 BR was built. It was used as a liaison aircraft by Air Arm's Command. After this airframe's service life expired, it was passed over to Air Arm's Technology School, and, in 1990, it was presented the aviation museum at Drzonow, near Zielona Gora in Western Poland.

On 19 September 1973, another prototype of a combat-trainer variant of the TS11 was test flown under the designation "Iskra 200 SB" with c/n IH0720. This aircraft was capable of carrying various combinations of armament on its four underwing pylons. After joining the series production, it was renamed "Iskra bis D", and its recce derivative, which was equipped with three AFA 39 cameras, was named "Iskra bis DF".

Series production of the TS-11 was stopped in 1987 after the completion of 424 aircraft in 20 different series, including 50 aircraft exported to India. The number of aircraft completed in each series is:

Series I	10 aircraft	
II	21	
III	30	
IV	15	
V	30	
VI	20	
VII	30	
VIII	30	
IX	5	
X	24	
XI	16	
XII	35	
XIII	1	prototype of single seat version
XIV	35	15th and later a/c sold to India
XV	25	all sold to India
XVI	30	first 5 a/c sold to India
XVII	22	produced in 1978
XVIII	10	produced in 1982
XIX	20	produced in period 1983/84
XX	15	produced in period 1986/87

Service Use:

In the early 1960s, the Warsaw Pact authorities announced a contest for training aircraft; the winner would be accepted as standard for the Pact's air forces. The contest consisted of comparative trials among the Soviet Yak30, Czech's L29 "Delfin", and Polish TSII "Iskra". These trials took six weeks and covered testing of flying characteristics and ease of maintenance. The "Iskra" was without a doubt the best aircraft. The easy and quick access to the equipment, thanks to removable panels in the forward part of fuselage, was the object admiration and envy by all the other competitors. These panels could be removed by single technician in no more than 20 seconds; it took much longer in the other aircraft. The TSII also had very easy access to the engine; replacing a engine took about 20 minutes. The engine in the competitive Yakolev took 2 hours to change!

The Iskra was also better in the area of production technology. For example, the fuselage was divided into two parts that could be fitted with all required devices before assembly thereby avoiding the necessity to work in confined places. After riveting the fuselage halves together, the airframe could be equipped with instrument units which were connected to the airplane by simple plugs. All this work usually took less than 20 minutes, which was especially important if an aircraft was to operate from the airfields without permanent technical facilities. Despite these advantages, the Iskra was not accepted by the air forces of the Warsaw Pact countries.

The Iskra holds four World records in the C1d category (aircraft of weight 17503000 kg): (1) 02 Sept 1964 a speed record on a 100-km closed loop: 715.7 km/h; pilot: Andrzej Ablamowicz. (2) 24 Sept 1964 a speed record on a 500-km closed loop; 730.7 km/h; pilot: Ludwik Natkaniec. (3) 24 Sept 1964 a distance record on a closed loop: 510 km; pilot: Ludwik Natkaniec (4) 26 Sept 1964 a speed record over a short 1525 km distance; 839 km/h; pilot: Ludwik Natkaniec.

All records were achieved the third prototype "03" after special preparation: the ejection seat and instrument panel were removed from the rear cockpit as were the protecting grill on air intakes, all gaps were filled, and the whole airframe was polished.

The Polish trainer was exhibited at several Western Air Shows including Farnborough and Le Bourget where it was the object of interest by contracting parties from Peru, Iraq and

India. This resulted in the signing in 1975 of a contract with Indian Air Force for 50 aircraft (plus spares). The first batch of Indian TS-11s was delivered, by sea, in October of the same year. All these aircraft were assembled by a team of WSK Mielec technicians. After assembly was completed, the aircraft were test flown by experienced test pilots from WSK PZL Mielec: Skowronski and Pamula. The aircraft delivered to India came from the XIV, XV, and XVI series. Twenty aircraft of the XIVth series were supplied, with the first one was coded 1416 (Indian number W1741) and the last 1435 (W1760). The whole XVth series was exported with airplanes serialised 15011525 (respectively W1761W1785 in India), but only five aircraft of XVIth series went to India; these were 16011605 (W1786W1790).

One Indian Iskra crashed during early 1976. The aircraft was performing so-called "sliding turns" when it went into a spin. After futile efforts to recover, the pilot ejected safely. After this accident, Indian authorities expressed reservations about the use of the Iskra in Indian climate and terrain conditions. However, the Polish-Indian commission investigating this accident determined that the spin was caused by excess displacement of the center of gravity. After detailed examination by WSK experts, and after a series of test flights by IL's test pilot Ludwik Natkaniec, it was determined that the center of gravity had been displaced by improperly applying protecting paint. This paint had been brushed on. On all further aircraft, the protective paint was sprayed on and no further problems were encountered.

After series production of Iskra ended, WSK Mielec continued producing spares parts. The Aviation Repair Works at Bydgoszcz are still responsible for general overhauls of the aircraft, but smaller repairs and modifications are carried out by Field Aviation Workshops.

The most recent modification to the TS-11 is the installation of a Bendix King radar carried out by WSK Mielec in early spring 1991 and known as the "Iskra bis R". The first of modified airplanes was 3H1917, and other Iskras destined for the program are serialised 1910 and 1918. They will be used by the 7 Special Aviation Regiment of Polish Naval Aviation based at Siemirowice for patrolling the Baltic Sea. Personnel of this unit unofficially named their renewed aircraft "Novax".

The radar's antenna was installed in the nose replacing the S13 gun camera, as well as the oxygen and compressed air connectors. The radar is located in rear cockpit, from which the control column was removed. The rear instrument panel was adopted for new equipment and connectors were relocated to upright of the nose frame. The nose is built as single part (replacing two used on normal aircraft), with a typical radar "bulge" in most forward section painted matt black.

TS-II Painting and Markings

The first prototype of Iskra (02) was painted with clear protective lacquer. The nose, the antennae for the radio altimeter, and fin tip were painted matt black. The aircraft also had the Polish checkerboards on the fin, rear fuselage, and lower surfaces of the wings. Additionally, 02 had small inscriptions "Iskra" in red, while the 03 and 04 prototypes had stylized white star thinly outlined in red and black "Iskra" inscriptions on both sides of forward fuselage. Large black "03" and "04" were painted on the rear fuselage and lower surfaces of the wings of the respective aircraft. The forward part of fuselage was painted in black, which continued at a sharp angle to the undersurface of fuselage till the engine's exhaust. These two prototypes had

national insignia on same places as 01. The upper surfaces of the wings, between the wing fences and tips, were painted red, while the tips of the wings and fin were painted black.

The prototypes and early production aircraft had stencil instructions in red on the wings, under the canopy (warning triangles: "UWAGA! FOTEL WYRZUCANY" - Warning! Ejection Seat), ahead of air intakes, and close to the engine exhaust. Most of these instructions was deleted on later aircraft.

The production aircraft preserved the natural metal color. The forward fuselage was painted grey (FS 26492); the antiglare panel in front of the windscreen was greygreen (similar to FS34324), and the tactical numbers on the sides were red. The tactical numbers are always related to the construction number: If an example aircraft carries the number 0604, it is the 4th aircraft ("04" in the number) of the VIth production series (respectively "06"). In case of threedigit numbers, the first one describes the series, while remaining two identify the individual aircraft number.

A TSII used by a training unit had its fin tip and nose painted in various colors denoting respective flights, and even single aircraft. Another interesting element of painting was the wide selection of units' badges. These appeared for the first time in the 1980s, and were adopted by combat regiments most of which had a few TSII (up to five aircraft) for training and liaison purposes. So, Iskras received the unit badges, although the form and size of the badge may differ a little from those painted on combat aircraft.

The Indian TSIIIs worn paint schemes similar to the Polish one, but they did not have the anti-glare panel. Twodigit tactical numbers are located on the forward fuselage, while full evidence numbers are painted on the rear fuselage and lower surfaces of the wings. Both evidence and tactical numbers are black.

A special group of Iskras are those carrying so-called "occasional paintings". The first noted example were aircraft prepared for an aerial parade on 22.07.66 for celebration of the Polish State's Millennium. Half of the sixteen aircraft that took part in the parade received their lower surfaces in white, and half in red. The TSIIIs flew over the celebration in close formation creating a big redwhite checkerboard in the sky. The participants included (with white undersurfaces) 0305, 0309; and (with red undersurfaces) 0310, 0311, 0318.

In September 1976, an Iskra bis DF, serialised IH0322 was demonstrated at the Farnborough Air Show. For display purposes, it received civil registration SPDOF and a whitered band on the fin. The number "322" was painted on the forward fuselage in black. All other inscriptions were also black. In 1977, the same aircraft was presented at the Le Bourget Air Show with orange and black elements added to the paint scheme, and a black PZL logo replacing the "322" number. The same machine was demonstrated a couple of more times, e.g. at Farnborough in 1978 and at the Aviation Industry Achievements Display at Warsaw's Okęcie aerodrome. It was probably shown to the public for the last time at Mielec aerodrome in August 1988. At the time of writing (November 1991), the SPDOF is parked on the distant edge of Mielec aerodrome awaiting a new engine. Will we ever have a chance to see SPDOF airborne again?

The TSII Iskra trainers are also used by "Rombik" an aerobatics team of the Polish Air Force. Until 1990, their aircraft had no distinguishing markings, but, in 1991, an attractive whitered painting scheme was applied to seven aircraft of 60th Training Regiment based at Radom. The TSII belonging to

"Rombik" also carry the badges of Air Force Officers' Academy and of their mother unit on the opposite sides of the fuselage. The 17 figures are located on the fins, while small "TSII" inscriptions in red painted on the forward fuselage. It should be also mentioned here that "Rombik" has changed it's name to "ISKRY".

Iskra Profiles

Besides of wide selection of badges and additional colorful markings, including those described above, the TSIIIs also carry various inscription that warn, or simply inform, about the type of instruments and equipment used. They usually describe the type of engine (S03W) and radio navigational equipment (AGD1). Their are commonly located immediately below of the windscreen and are painted in black. The Iskras also carry the emblems of repair works: WZL for Wojskowe Zakłady Lotnicze (Military Aviation Works) or PWL for Pulkowe Zakłady Lotnicze (Regiment Aviation Works).

After a long time of use within Polish Air Force with the necessary repairs and overhauls and resulting new coats of paint, individual Iskras differ one from another in very distinct ways. It is very difficult to find two aircraft that look the same, even if they were produced in the same production batch. Some persons familiar with the secrets say that there are no two identical TSIIIs within the PAF. This is the typical, but never written, rule.

1. TSII Iskra bis, c/n IH03; the second flyable prototype. The aircraft is bare metal overall. The stripe on the forward fuselage, which continues on the lower surface, the top of the fin and wing tips are black. The star is white outlined in red as is the "Iskra" inscription and all stencilling.

2. TSII Iskra bis, c/n IH0109; the ninth aircraft of the first series, with typical ejection seat CUIX, a so-called "heavy" (also used with Lim5, -6, 6bis). The entire aircraft in bare metal with antiglare panel ahead of windscreen in grey (FS26099). The top of the fin is light blue (FS35466). The national insignia in standard places: fin, rear fuselage and lower surfaces of the wings.

3. TSII Iskra bis DF, c/n IH0322, reg. SPDOF, is owned by PZL Mielec and was shown at various air shows. It was demonstrated at Farnborough in 1976 and 1978 and at Le Bourget in 1977. At the time of writing, it is stored at Mielec (with an engine) and is shown on static display during local air shows. The aircraft is bare metal overall, with the forward part of the fuselage painted orange (FS22510) with black accents. The same orange appears on the lower and upper surfaces of the wings. The white and red Polish flag was located in the middle of fin whose top is painted black. The "322", factory emblem, and registration are black. At the time of writing, the tactical number was deleted.

4. TSII Iskra "200 BR, c/n 4H0823; the only single-seat Iskra was this prototype for a light combatreconnaissance (BR = BojowoRozpoznawczy) aircraft. At the present moment, it is in a museum at Drzonow near Zielona Gora, in Western Poland. The "BR" wears a camouflage of light green (FS34128), tan (FS30219), and olive green (FS34079); the lower surfaces are light blue (FS35180). The tactical number is white and the national insignia are applied in the standard locations.

5. TS-11 Iskra bis DF, c/n 3H1630, of 61 PLSz at Biała Podlaska is in bare metal. The anti-glare panel in grey, the top of the fin is yellow with a white vertical bar in the middle; badges are of the Air Force Officers' Academy and Deblin-based 58 Training Regiment; the tactical number is red (FS11310).

6. TSII Iskra bis D of the Indian Air Force's Air Academy preserved in natural metal scheme. Fin, fuselage band (with two black stripes), and wing tips are yellow (FS23655). Both numbers, tactical and serial, are black.

7. TS-11 Iskra bis DF, c/n 3H2013, belonging to 7 PLS at Siemirowice, is painted in a new camouflage scheme of light grey (FS26229), dark grey (FS26132) and pale yellow (FS23481) on upper surfaces, with light blue (FS25230) undersurfaces. The "eyes" are yellow and brown; the tactical number is red outlined in yellow.

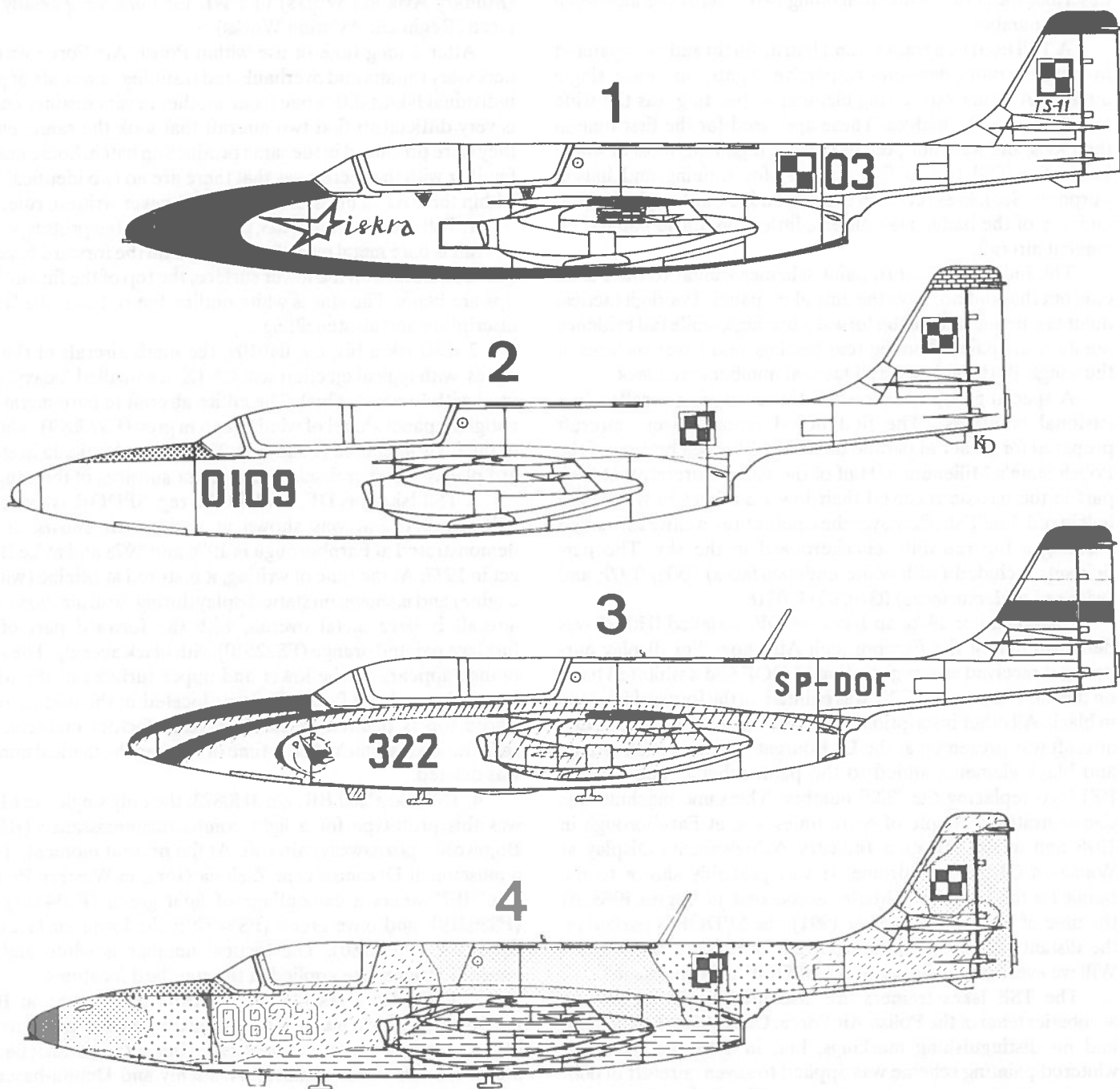
8. TSII Iskra bis DF, c/n 3H1810, of 19 Target Tug Flight at Slupsk, is one of few aircraft carrying sharkmouthstyle emblem. Bare metal overall, standard markings, shark's mouth in red with white teeth. Top of the fin and tactical number are black.

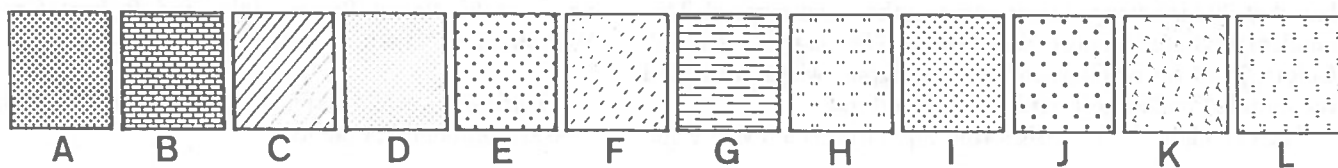
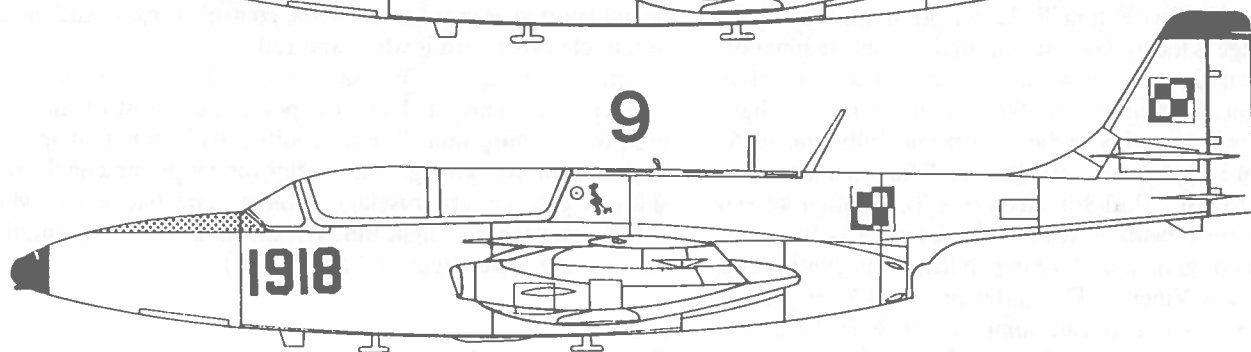
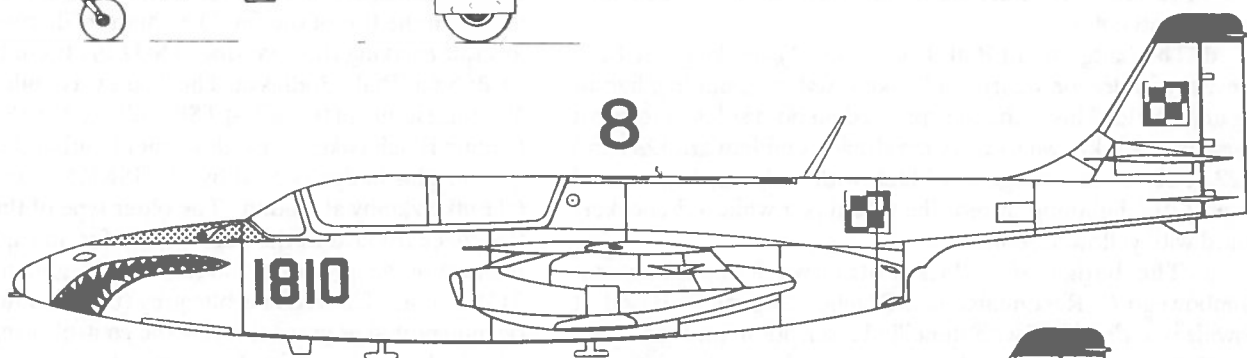
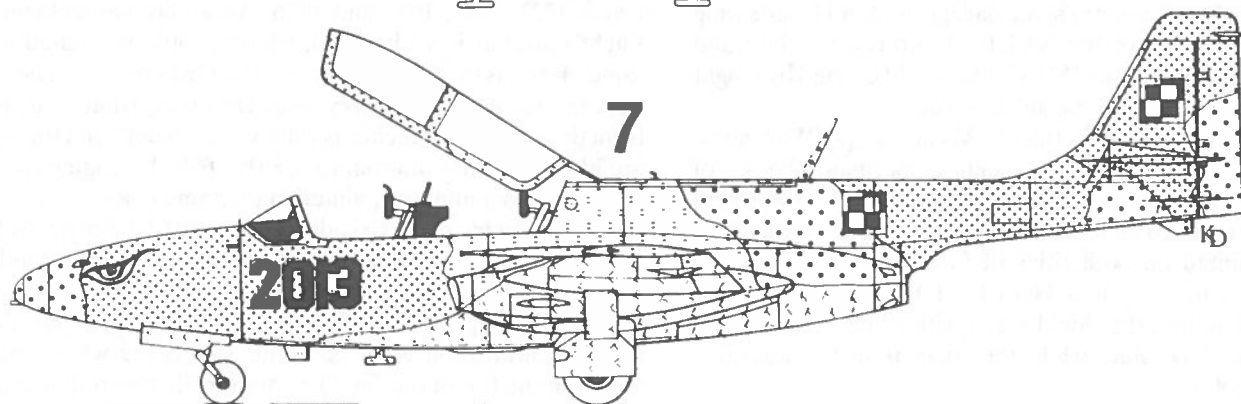
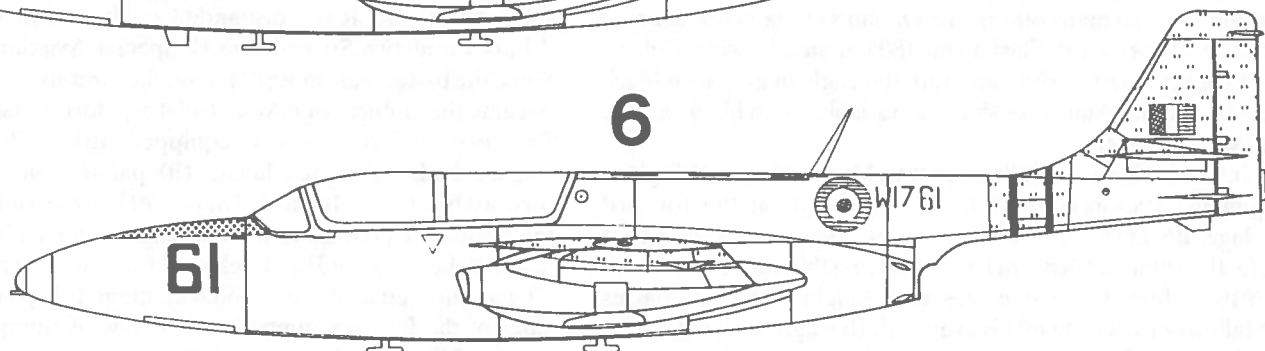
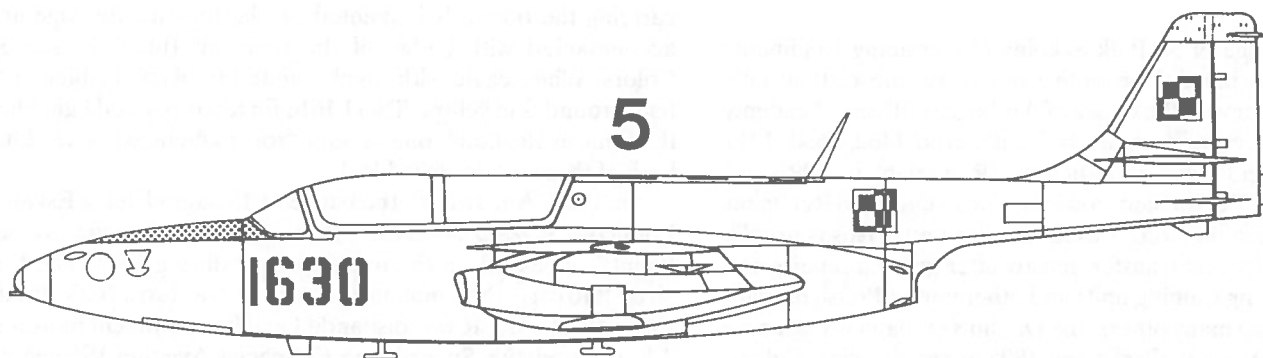
9. TSII Iskra bis DF(R), c/n 3H1918, of 7 PLS, is equipped with "King" radar with the antenna located under a reshaped

cover in the nose. Apart of the radar, the aircraft is equipped with GPS with antenna mounted ahead of VHF antenna blade. Aircraft 1918 is in standard colors with standard insignia; the top of the fin and the radar cover are black.

Color Key

A	Dark Grey	FS26099
B	Pale Blue	FS35466
C	Orange	FS22510 (SPDOF)
D	Pale Green	FS34128 (0823)
E	Tan	FS30219 (0823)
F	Olive Green	FS34029 (0823)
G	Blue	FS35180 (0823)
H	Yellow	FS23655 (IAF)
I	Dark Grey	FS26132 (2013)
J	Light Grey	FS26329 (2013)
K	Light Blue	FS25230 (2013)
L	Pale Yellow	FS23481 (2013)





Iskra Badges

a. The badge of 58 Pulk Szkolny (58 Training Regiment) from Deblin is painted on both sides of the nose. It usually appears together with the badge of Air Force Officers' Academy (see 14) and is carried on aircraft numbered 1402, 1630, 1917 (the latter aircraft was modified to "R" variant in 1991 and transferred to 7 PLS in Siemirowice). The badge of 58 Regiment may also be seen on aircraft used in other units. This is usually caused by equipment transfer, mostly after general repairs and overhauls, among training units and other unit of Polish military aviation. Among many others, the Deblin's emblem was seen on TS-11 1630 in Biala Podlaska and 1805 in Siemirowice. Colors: The checkerboard is white and red, the eagle in grey with black accents, and the Amazon's shield is dark blue with black outline and two white stars.

b. The badge of 41 Pulk Lotnictwa Mysliwskiego (41 Fighter Regiment) stationed at Malbork is painted on the forward fuselage. It's lower edge is usually located at half the height of the tactical number. Known Iskras carrying this emblem are 2009 & 2010. Colors: The badge presents a knight with coat-of arms of Malbork city. The knight is in aircraft (background) color with dark blue MiG21's silhouette in the background. A Husar's wing (Polish heavy cavalry of the XVIIIth Century), in white and black, is located right of the "MiG". The shield carried by knight is brown and the badge on the shield is red.

c. The badge of 1 Pulk Lotnictwa Mysliwskiego "Warszawa" based at Minsk Mazowiecki presents a mermaid (badge of Warsaw) with wings. The "1" (1 PLM) is painted on the shield carried by mermaid. The foam on the wave is stylized "plm". On TSlls it is painted on both sides of forward fuselage and an aircraft known to carry it is Iskra bis DF 2002. Colors: The mermaid is in yellow, the shield is red with white "1", the wings and wave are dark blue, while the foam is in the aircraft's background color.

d. The badge of 10 Pulk Lotnictwa Mysliwskiego at Lask consists of a dragon wearing a Krakow-style hat, holding lightning and shield. This emblem is painted on both sides of forward fuselage. TSlls known to carry the dragon emblem are 1235 and 1222. Colors: The dragon is black with red details (hat and mouth), the lightning in red, the shield is a whitered checkerboard with yellow accents.

e. The badge of 7 Pulk Lotnictwa Rozpoznawczo-Bombowego (7 Reconnaissance Bomber Regiment) based at Powidz is a winged "7" with stencilled inscription "plbr" and date "1946". The badge is located on the rear of the fuselage immediately behind the national insignia. An aircraft known to carry this badge is Iskra bis DF numbered 1802. Colors: The "7" is light blue with white wings, and both the inscriptions (plbr and 1946) and the bomb are black. Iskra 1802 has black fin top and carries the badge of 7 PLBR's IInd Squadron (see 7). Another known Iskra bis DF from Powidz is 1616. This aircraft has the mentioned badge painted on a dark orange background, with white inscription "Primus Vincit" ("The better one wins") being the 7 PLBR's pilots motto. An aircraft numbered 1616 has light blue top of the fin, as is the bomb on the Squadron badge.

f. The badge of 6 Pulk Lotnictwa Mysliwsko-Bombowego based at Pila is a winged tiger carrying the checkerboard. This emblem is painted on port side of forward fuselage of Iskra 902. Colors: The tiger is yellow and black with pink wings, white and red mouth; the checkerboard in white and red.

g. The badge of 7 PLBR's IInd Squadron is a diving eagle

carrying the bomb. It is painted on the forward fuselage and accompanied with badge of the regiment (blue "7"; see 5). Colors: White eagle with bomb painted in black, or blue. The background is in yellow. TS-11 1616 fin top is painted light blue, the same as the bomb on the Squadron emblem, while 1802 has both of these elements in black.

h, i, k, l. An Owl (k), the badge of 15 Samodzielna Eskadra Lotnictwa Rozpoznawczego (15 Independent Reconnaissance Flight), appeared on the unit's aircraft during 1983. The first aircraft to carry this emblem, on the nose, was Iskra 1623. By late 1980s, the 15 SELR was disbanded and its equipment moved to 7 Pulk Lotnictwa Specjalnego (7 Special Aviation Regiment). Since the badge was "moved" too on the aircraft, it automatically became the emblem of new unit's Ist Squadron's Ist Flight (IInd Squadron of 7 Regiment is equipped with An2s). The IInd Flight's badge is a "sea horse" (h) painted on both sides of forward fuselage of Iskras 1622 and 1703, to mention a few. After the Regiment's reorganization during the early 1990s, an "Owl" became the badge of IInd Flight and the "witch on a broomstick" (l) was adopted as it's additional emblem. It is painted on both sides of the fuselage, immediately below of canopy's hinge, of Iskras 1722, 2012, 1919 and 1716. An additional emblem of I Flight's aircraft is a "devil" (i), whose profile is painted in the same places as the "witch". Colors: The Owl's head and back are dark brown, it's front is grey; eyes are black, white and yellow from the center; the anchor is yellow. The "witch" and the "devil" are black. It is not unusual to see the TSlls belonging to 7PLS with fin tops and noses painted in the same color.

j. The badge of 42 Eskadra Lotnicza of Ist Korpus WLOP (Wojska Lotnicze i Obrony Powietrznej - Air Force and Air Defence) is a Nike painted on both sides of the forward fuselage. This emblem appeared on Iskra bis DF 2003 and 2001. Additional identification element of this unit is the white and red stripe on the top of the fin. (The author "discovered" one more aircraft carrying this marking: TS-11 bis B c/n LH0414 with the 61 PLSz at Biala Podlaska. This Iskra was built on 15 February 1969 and is one of the oldest TSlls still used by Polish Air Force!) Colors: Black Nike on a yellow shield outlined in red

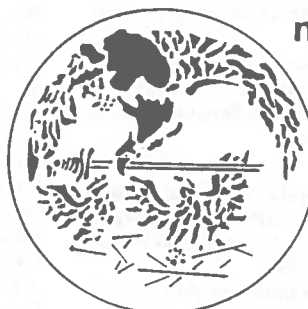
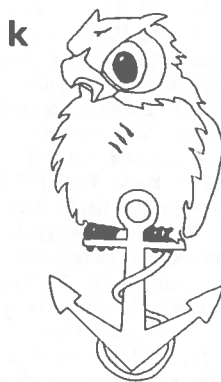
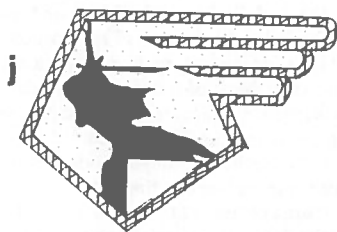
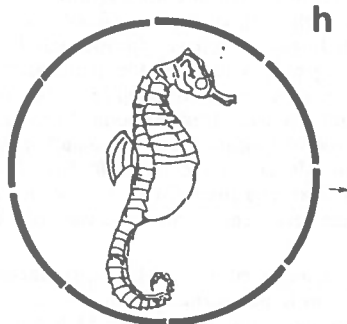
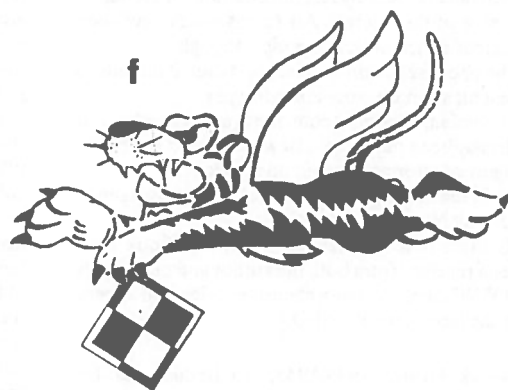
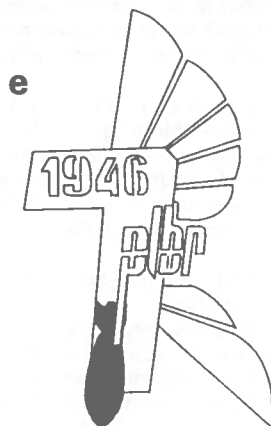
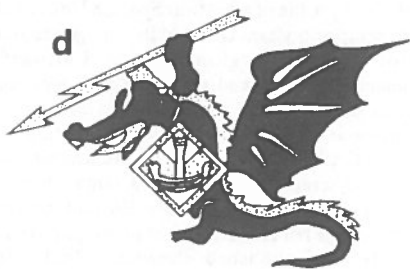
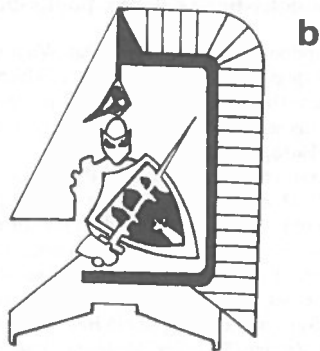
m. This badge is used by the "ISKRY" Aerobatic Team of 60 Pulk Szkolny at Radom. The older type of this emblem, with the checkerboard as the background for an eagle, may be seen on most of the aircraft of the Radom's Regiment (i.e. 101, 1909, 713). Colors: The Eagle is bluegrey (black on the sketch should be interpreted as grey) carrying the coat-of-arms of Radom city in red; checkerboard is white and red.

n. The badge of Wyzsza Szkoła Oficerska (Air Force Officers' Academy) at Deblin is painted on most of the TSlls used with training units. It is an additional element that appears besides of individual regiments badges and is painted on the port sides of the forward fuselage. Colors: The badge has white details (eagles) on a light blue background. (It is presented in the drawing in the "negative" for clarity!).

Acknowledgements

I would like to thank to Ludwik Natkaniec, Grzegorz Skowronski, Pawel Przymusiala, and Robert Gretzyngier. Without their help this article would have been impossible.

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Arab Air Forces, Charles Stafrace. 64 pages, 21.5 cm x 28 cm, softbound. 28 color and 205 b/w photos, 16 color profiles. Squadron/Signal Publications, 1115 Crowley Dr., Carrollton, TX 75011-50101 USA. \$9.95 plus p&p.

This Squadron Special follows the format of previous publications in the series. The countries covered are: Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, United Arab Emirates and Yemen (North, South & United). The coverage for each country varies between half a page and 12 pages. In most cases the narrative concentrates on aircraft deliveries and there is considerably less information on the actual service of the aircraft. Air forces which have seen combat do get better coverage, though.

The photo selection is quite good even if it tends to be a bit short on early aircraft types.

This volume does not contribute much that has not already been published elsewhere, but it is a handy digest of information and illustrations.

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[Editor's note: Review copies of this book have been received from both the author and our friends at WWI Aero. A comprehensive review will appear in the next issue of SAFO.]

Slovak Airmen 1939-1945, Jiri Rajlich and Jiri Schnal, 64 pages, 21 x 29.5 cm, softbound. 120 b/w photos, 45 color profiles. Private publication, Kolin. 1991.

Although titled *Slovak Airmen*, the book covers Slovak aviation in general, and particularly the aircraft used. All text is in both Czech and English, written in columns side by side. The narrative begins with the conflict with Hungary in March 1939, followed by a short piece on the Polish campaign. Other chapters deal with Slovaks serving with the RAF and the Soviets, rebuilding the Slovak Air Arm with German support, Civil Aviation in Slovakia, the Eastern Campaign, defending Slovakia against the USAAF, the collapse of Slovakia in 1944 and the Tri Duby uprising. Throughout, the text is well researched and gives a lot of information on personnel, aircraft, units, dates and operations. Much of it is obviously based on Slovak Air Force documentation and it seems safe to assume that the bulk of it is previously unpublished. At the end of the book, there are several tables showing organizations at various dates, individual victories and losses for selected air battles, a listing of all Slovak civil aircraft of the period, etc.

The photos are rather a mixed lot and the average quality is unfortunately rather poor. Still, there are several quite interesting shots, especially those showing German aircraft in Slovak service. The poor photos are also compensated for by the many color profiles.

If you have any kind of interest in the subject, this one is definitely not to be missed.

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Hrvatski Zrakoplovi, Vojislav Jereb and Danijel Frka, 80 pages, 21 x 29.5 cm, softbound. 101 b/w and 13 color photos, three color 3views. Carski Husar, Ilica 54, Zagreb, Croatia. 1994.

This interesting little book deals with the Croatian Air Force (HRZ) during the war of 1991-1993. The language is unfortunately Croatian, but there is thankfully a five-page English summary and all

photo captions also come in English. What makes the book special are the photos, most of which show aircraft used by the Croatian forces. The reproduction quality is quite good, and a far cry from the Eastern European publications of old.

The aircraft scraped together by the HRZ ranged from MiG21bis (already known to the SAFO readers) to homebuilts. The bulk of the force consisted of agricultural aircraft, such as An2s, Cessna AgCats and PiperPawnees, all painted in intricate color schemes. There were also some light aircraft and helicopters, including an old Bell 47J liberated from the Zagreb Technical Museum. Attempts to restore a P47 to flying status failed, however! At the back of the book there is a section giving short histories (in Croatian) of 43 individual aircraft used by the HRZ, giving c/ns and previous identities, when known.

Judging from the back cover, there are several more publications available in the same series, including one dealing with Croatian aviation in WWII. Although admittedly a largely unreadable publication of a very obscure subject, I do not hesitate to recommend this little book to all SAFO readers.

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[Editor's Note: A review copy has been received from Tony Morris, in England, and will this book will be the subject of an extended review in the next issue of SAFO. In the meantime, I highly recommend this book. Tony writes, "The Aviation Bookshop in London gets supplies erratically and any readers interested in obtaining this book should write to them at, 656 Holloway Road, London, N19 3PD, England. Cost is approximately 8 pounds sterling plus postage. If the shop cannot help, readers should write to myself (Tony Morris, Ashbourne House, Marsh Gibbon, Bicester, Oxon OX6 0HW, England) or to the co-author (Vojislav Jereb, Matka Laginje 11, 51500 Krk, Croatia)." Tony also send some Croatian decals for review: see the decal department in this issue of SAFO.]

The Spanish edition of *Los Cazadores de la Aviacion Republicana* by Juan Arraez Cerda still awaits publication, but France's AVIONS has published, in their 'Hors Serie n3', "L'Aviation de Chasse de la Republique Espagnole" by Arraez, FF165 including p&p from the publishers: SARL LELA PRESSE, 39 Rue A. Briand, 62200 Boulogne/Mer, France. Check or money order. It has 114 pages, about 220 photographs and over 30 color profiles by Serge Jamois. A new book by Juan Arraez on a/c of the Spanish Academia General del Aire will soon be published by Quiron Ediciones. New books from the Czech Republic include:

(1) Miniprofil c. 1. Focke Wulf FW 189. HaPM spol. s r.o., Jerevanska 3, 100 00 Praha 10, Czech Republic. Book #1 published by HPM, the editors of the excellent modelling magazine of the same name. 14 cm by 20 cm format. The 16 pages of text is by I. Pejcoch and V. Janovsky. Sadly, it's only in Czech, so no comments, except that it seems to deal with the development of the a/c and its operational use. There is a short technical data table. Seventeen b/w photographs illustrate the text, some of them providing good detail views for modelers. There are also 3 sideview drawings covering the A, B and C versions, plus detail drawings, also with modelers in mind (cockpit, landing gear, and engine detail). Front and back covers are excellently illustrated with color profiles for 4 Luftwaffe machines and one Slovak a/c (plus a top view for this one). Inside

covers also include drawings of 4 Luftwaffe a/c (with top view for two of them) and one Hungarian a/c. The editors seem to have a connection with Bilek Models, as this kit (Airfix molds) is announced and illustrated in the booklet. Coming profiles are: 'c.2 Kawanishi N1k Rex/George', 'c.3 Grumman F14A Tomcat', 'c.4 Commonwealth Boomerang'.

(2) **Bombardovací letoun. Heinkel He 111, #1 in MILITARIA HOBBY series**, by Jiri Chodil and Zdenek Svoboda, published by Nase Vojsko. Only (incomplete) address mentioned is: Vydani 1., Praha. A4 format, 32 pages including 24 pages with 33 b/w photographs. The front cover has a color illustration by Zdenek Svoboda depicting combat between He 111s and Spanish I16s. The back cover includes a profile of a postwar Spanish He 111 H16 with scrap top view. The middle 8 pages contain color profiles (Legion Condor, Luftwaffe, Romanian, Slovak, and postwar Czech a/c), unit markings, and cockpit drawings. Also included are a small side-view drawing of He 111B-2, scrap side view of CASA 2111, scrap top and ventral views of He 111b2, scrap side view He 111J, large side views of He 111H22 and H6, top view H6, and top view (double page) of He 111Z. Most photographs have already been published elsewhere. Text, once again, is only in Czech, so no comments.

"I have recently received some Polish booklets: (1) HEINKEL He 111, #12 in MONOGRAFIE LOTNICZE series, by Robert Michulec. Color illustrations by Jaroslaw Wrobel and Slawomir Zajaczkowski, technical drawings by Robert Michulec and Witold Hazuka. Published by Agencja AJPRESS. ISSN 08677867, PO Box 73, 80-461 Gdansk 45, Poland. A4 format, 48 pages including 27 pages with 58 b/w photographs, 13 pages of accurate 1/72 scale line drawings of most important versions, lots of detail and scrap views, 2 pages of color profiles (Spanish and German a/c), plus 2 pages depicting an He 111E from KG 1 from different positions and a pilot, and three pages with facsimile factory detail drawings. Many of the photographs had never been published before. There are also technical data tables, tables for the aircraft codes used by every Luftwaffe unit provided with He 111s, and a description of camouflage and colors cover the inside of the covers. The front cover shows a combat between an He 111 and Polish PZL P-11s, and back cover shows a color illustration of the cockpit of an He 111H. As for the text, again no comments as it is in Polish only. Most of it deals with a/c development and separate chapters for export, operational usage, and technical description of H and F versions. Nevertheless, if you look below, English readers are luckier this time.

(2) **Heinkel He 111, #2** in the AIRCRAFT MONOGRAPH series, by Robert Michulec. Color profiles by Jaroslaw Wrobel, Slawomir Zajackowski and Krzysztof Cieslak. Technical drawings by Robert Michulec and Witold Hazuka. Published by Agencja AJPRESS. English edition by BOOKS INTERNATIONAL, 69 Lynchford Road, Farnborough, Hampshire GU14 6EJ, England. A4 format. This is obviously the English version of the booklet reviewed above, in a stretched and improved version. Sometimes its English is a bit awkward, but it is readable. A total of 56 pages with 70 photographs; some of the photographs from the Polish edition have been deleted in the English version. All photographs are credited in this edition. The 4 pages of color profiles (Spanish, German, Hungarian, and Romanian a/c) are new to this edition. There are

also 16 pages of 1/72-scale technical drawings and 3 pages of factory drawings, some of them not published in the Polish version. The first part of the book deals with the development of the He 111 in 15 pages. Two pages are dedicated to the export a/c. One page deals with camouflage and markings. The fourth chapter covers a/c service, from Spain to the last days of WW2. The fifth chapter is a technical description of the plane. It's a pity that the table referring to a/c codes of the different Luftwaffe units equipped with this model has been deleted in this English edition. The front cover illustration shows a combat between He 111s and Yak fighters. The back cover is the same as in the Polish version. AJPress has raised standards up to Western levels. Number 1 in the English series covers the Su5 Flagon. Number 3 will deal with the Messerschmitt Bf 110 (a review of the Polish version is below). Number 4 will be dedicated to the Focke Wulf FW 190 A/G and #5 will be the first of 4 volumes dedicated to Luftwaffe camouflage and markings.

(3) **MESSERSCHMITT Bf 110**, #16 in the **MONOGRAFIE LOTNICZE** series, by Janusz Ledwoch. Color illustrations by Jaroslaw Wrobel and Jacek Jackowski. Technical drawings by Krzysztof Zurek and Witold Hazuka. Fifty-six pages including 36 pages with 70 photographs, 9 pages with 1/72 scale drawings of the main versions of this plane, one page with drawings locating all stencilling on the a/c, 7 pages of factory drawings, and 4 pages of color profiles (German and Iraqi). The text deals with development, operational usage, export, and surviving a/c of the type, camouflage and markings, and technical description. The front cover shows a combat between Bf 110s and Hurricanes during the Battle of Britain. The back cover shows a color illustration from the pilot's seat. The inside of the back cover shows a color cutaway of a Bf 110g with a standing pilot. Paper quality is now up to Western standards.

(4) **I-22 IRYDA**, #3 in the **PRZEGLAD KONSTRUKCJI LOTNICZYCH** series, by Piotr Metrak, Tomasz Makowski, and Krzysztof Zurek. Published in 1991 by Agencja Lotnicza Altair, Sp. z o.o., Ul. Warecka 11/36, 00034 Warszawa, Poland. 1/72 scale drawings by K. Zurek, 1/48-scale drawings by Cezary Jadczyk and K. Zurek, color profiles by Robert Gretzyngier. Twenty pages with 24 b&w and 21 color photographs. Four of those pages are illustrated with 1/48-scale plans. One page illustrates the camouflage and markings in 1/72 scale with FS reference color of SPPWE, the prototype. Inside of the front cover has two color profiles of the prototypes SPPWD and SPPWE. The front and back covers are illustrated with four color photographs of those a/c. There is a bonus in the form of a double page color poster. The Polish text describes development of this a/c in two chapters with a third chapter describing the camouflage and markings. There is also a table for a/c data. It's a pity that this booklet is only in Polish, because many SAFO readers and modelers must be interested in this replacement for the PZL TS11 Iskra as the advanced trainer in the Polish Air Force. (SAFO must really be an inspiration for the sale of Slav language dictionaries!) Number 1 in this series is dedicated to the SU22M4 and #2 to the Mi24D. Forthcoming titles include: #4 B24 Liberator, #5 MiG-29A, #6 MiG-23F, #7 Lockheed F117A, and #8 Su27. Paper quality in this booklet is not very good, so the reproduction of color photographs is sometimes poor. Let's hope that forthcoming issues will improve this matter.

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Israeli's Best Defense: The first full story of the Israeli Air Force. by Colonel Eliezer "Cheetah" Cohen. Airlife Publishing Limited, 504 pages, 35 photographs, 1993

The last few months have seen a number of new articles and books published about the Israeli Air Force. This is due, in no small part, to the release of recently declassified material by the Israeli Air Force historical branch.

This is certainly not the first book on the history of the IDF/AF, but since it was written by a former Israeli officer who flew F-51D Mustangs during the 1958 Suez Crisis and later commanded a helicopter squadron, it is probably one of the most complete book on the subject available in the English language. While not a scholarly work full of statistical data, this book, nevertheless, presents a comprehensive study of one of the best air forces in the world. Included are many pilot interviews and descriptions of many little-publicized actions and the tactics used. For example, the reader can find new details about the role played by the F-51Ds during the 1956 war when they were assigned to hunt Egyptian T-34 tanks. Also of interest are the strategic reconnaissance missions flown throughout the Middle East (as far away as Libya) by the Mosquitos during 1950-1958. Also very fascinating are new details about the evaluation of the Iraqi MiG-21F which defected to Israel.

The Six Days War is covered by a multitude of individual action reports. The discussion of the War of Attrition is highlighted by the description of little-known operations, such as the commando raids by Sikorsky S-58 and Super Frelon helicopters deep within Arab territory to blow up bridges and other strategic targets, and the night bombing missions by newly-delivered Skyhawks against enemy artillery carried under the illumination of flares. The description of the Yom Kippour War starts with vivid reports of Arab air strikes against the Israeli advanced air bases in Sinai. These are notable for the determined, and often very precise, low-level attacks by MiG-17s and Su-7s. The desperate missions flown against the Arab integrated air defense are also well analyzed.

The last part of the book covers the latest developments of the IDF/AF, particularly its clear-cut victory in Lebanon, in 1982. These air attacks were carried out against the Syrian sophisticated missiles umbrella which included new systems such as the Soviet SAM-8 and low-level SAM-9 crewed, according to the author, by Libyan troops.

My only regret is the use of unreliable data concerning the results obtained by the IDF/AF against its enemies and its own losses. The author appears to have taken as gospel truth the figures released at the time by the Israeli Ministry of Defense. For example, the author reports that during the Six Days War, the IDF/AF shot down 60 Arab aircraft in exchange for only 3 Israeli aircraft. Recent figures released by the IDF/AF historical service state that, in fact, Israel lost 12 aircraft to enemy fighters.

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No Margin for Error: The Making of the Israeli Air Force, by Ehud Yonay, 29 photos and 427 pages. Pantheon Books, New York 1993.

Air power played a critical role in World War I and a decisive one in World War II. Any modern state now knows it must rely on its air force to ensure its security. Israel, a small nation sparsely inhabited, has, on several occasions, survived only by the daring actions of her air force. Everyone remembers how the Israeli Air Force destroyed over 450

Arab aircraft on the ground in the first hours of the Six Days War, giving an assured victory to Israel. Therefore, it is not surprising that many people believe that the Israeli armed forces have always recognized the importance of air power. This book shown that was not the case. In fact, the Israeli Air Force had to fight not only against the Arab air forces, but also for its right to exist as an independent service. When the Jewish State was created, its armed forces had only a guerrilla and infantry tradition and little thought was given to air power. It was only by the actions of its commanders that the Israeli Air Force could, step by step and with many setbacks, obtain recognition as an important element of the Israeli defense establishment. The author describes the personalities of the commanders who made the Israeli Air Force what it is today, and how difficult it was to convince the Joint General Staff to give the IDF/AF the priority it deserved.

The book also describes the difficult work of establishing a sound aerial doctrine and the successful application of this doctrine during the Six Days War.

The book is also full of details of the tactics used by the Israeli Air Force throughout its existence, such as during 1967 conflict, and its very sophisticated, but cumbersome, planning which failed to destroy the Egyptian air defense integrated network prior to the 1973 war.

It goes on to describe the re-emergence of the critics after the Yom Kippour War and the partial failure of the IDF/AF to adequately support the Army during the opening phase of the conflict and its subsequent inability to destroy the Arab's mighty missile umbrella. It was only in early 1980s that the Israeli Air Force, through a complete reshaping of its structure and the introduction of new technologies, such as the electronic warfare systems and precision-guided ammunitions, was fully recognized by the other services.

On the international front, the IDF/AF has served as a proving ground for the new vision of modern war elaborated both in the East and West at the end of the 1980s and so successfully applied during the 1991 Gulf War: an "Air Land Battle" based on hightempo, highintensity, land-air operations with the use of precision guided ammunitions to destroy enemy command and control, air defenses, and operational formations on vast scale. These were advocated by men such as USAF Colonel James Warden and Soviet Marshal Nikolai Ogarkov.

Unfortunately, the author doesn't give much details about the cooperation with the American. Nor does he discuss the possibility that these same doctrines are being also adopted by Israel's possible enemies, such as the Syrian Air Force. Neither does the author give much information about the role given to the IDF/AF in the nuclear-deterrence strategy of Israel. Israel is assumed to have had the capacity to deliver a nuclear strike since 1973. Various sources even suggest that during the darkest hours of the Yom Kippour War, a squadron of Phantoms equipped with nuclear ordnance was kept at the ready.

These shortcomings notwithstanding, this book is highly recommended to everyone interested in the Israeli Air Force in particular and to students of modern air power in general.

Albert Grandolini (SAFCH #1313), 1 Alle des Sorbiers, 93240 Stains, France.

"Our readers might be interested to know that Jim Haycraft (214 Kenmark Dr., Newark, DE 19813, USA) is selling copies of ICARE #149, on the Spanish Civil War Nationalist air operations. It has

the usual good prints, but most of the photos have already been published. To me, it is less interesting that #118 and #130 on the Loyalists.

"Aviation USK (602 Front St., Box 97, Usk WA 99180, USA) is selling AVIONS magazine, as well as their specials. I've heard that Avions Special #3 on the Spanish Civil War was mostly written by Juan Arraez Cerda.

"From Madrid I have been told that I-16 'ace' J. M. Bravo and his wife are almost finished translating SCW/WWII I-16 'ace' Antonio ARIS Arias' memoirs from Russian to Spanish."

Tom Sarbaugh (SAFCH #497), #450 Boynton

Ave., Berkeley, CA 94707, USA.

Un Joven Museo: el de Aviacion, a history of Spanish military aviation in comic-book format. 20 pages, 21.5 cm by 31.5 cm. Published by the Museo del Aire, Cuatro Vientos, Madrid, Spain.

If someone in your family is studying Spanish and is interested in aviation, this little book may make an ideal present. The whole panorama of Spanish aviation history is covered: the first man-carrying balloons, first lighter-than-air, and heavier-than-air machines; the war in Morocco; the 1st World War; the long-range flights across the South Atlantic and to the Far East in the 20's and 30's; the

Spanish Civil War; and the era of the jet fighter. The color illustrations are well drawn with the aircraft faithfully depicted in accurate colors and correct markings. A number of maps provide geographical reference while people in uniforms and native costumes provide a cultural background. Don't be surprised if you catch the modeler in the family sneaking a look to get some ideas for a future diorama project.

[Editor's note: The SAFCH Sales Service has two copies of this book for sale.]

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"In April 1994, the association 'Bayerische-Flugzeug-Historiker' (BFH) was founded at Oberschleissheim near Munchen. BFH is dealing with the aviation history in Bavaria, aircraft archeology and restoration, and modeling. Recently, an English-language brochure was published to introduce BFH. Enclose please find a copy. Possibly some members of SAFCH will be interested in the BFH, so would it be possible to mention the formation of the Bayerische-Flugzeug-Historiker in the next issue of SAFO?

"Not really a small-air-forces matter, but, nevertheless, I have to ask for your help: The aviation-history section of BFH recently started to research the history of USAAF and US Army units at the old Schleissheim airfield. First, we would like to prepare a chronology of US units based there. According to our - unfortunately still meager - information, the 344th Bombardment Group, USAAF, had been based at Schleissheim airfield from September 1945 until February 1946. The airfield was reopened on 1 July 1947 and used by several units of the US Army until September 1968. It is not easy to find information and reference works on US Army flying units here, so do you know of any associations to contact or other useful addresses? Thank you!

"Some time ago I sent you two copies of the Kuwait Air Force brochure. I still have two copies of the Arabic-language issue of this book, so should there

be any interest just let me know."

Martin Bach (SAFCH #1275, TheodorStormStr. 16, D81245 Munchen, Germany.

Air Zone, Le Nouveau Mensuel de l'Air! BP n.49, 28210 Nogent-le-Roi, France. A one-year subscription for 9 regular issues and two special issues is 405FF. Payment preferably by check drawn in FRF on a French bank, by draft or postal giro.

It is with greatest pleasure that I can report that Jean-Michel Guhl, a good friend and staunch supporter of the SAFCH, has started a new magazine: **Air Zone**. If this magazine looks familiar to you, it shouldn't be a surprise because Jean-Michel was the editor of the excellent, but now defunct, magazine **Air Action**. The format of **Air Zone** is very similar to that of **Air Action**: the emphasis is on contemporary military aviation around the world with French subjects getting the most attention. There are lots of color photos reproduced on high-quality glossy paper. The text is in French, but the photos have English captions and there is a one-page English summary. There are maps and color drawings of national and squadron insignia. Each issue has seven pages of book and kit reviews. Let's look at the first three issues:

#1 "Mirage 2000 sur le Nevada" 10-page coverage of French participation in Red Flag 94-2 including 22 color photos of Mirages and other participating a/c. "Saga Rafale" one page including 2 color

photos. "Adieu au Rhin" 10 pages including 9 photos of French Mirages. "Etoiles Filantes; Part 1" 11 pages including 13 color photos of Russian a/c during their last year in Germany.

#2 "Au Top du Top" 5 pages including 7 color photos of the a/c participating in the 1994 French fighter competition. "Etoiles Filantes: Part 2" 10 pages with 20 more color photos of Russian a/c in Germany. "Adieu Jeunesse" 9 pages including 13 color photos of Mirage III and 5 on the occasion of their retirement from the French AF. "Fulcrum Magyars" 5 pages including 7 color photos of Hungarian MiG-29s. Short notes and color photos of Portuguese F-16, Slovak MiG-29, and Turkish F-16.

#3 "XXXeme Anniversaire des F.A.S." 4 pages including 5 color photos of the a/c of the French nuclear force. "Etoiles Filantes: Part 3" 8 pages including 18 more photos of Russian a/c in Germany. "Troc Franco Espagnol" 2 pages including 2 photos of French and Spanish Mirage F.1s. "Delta Blues" 10 pages including 13 color photos of Belgian Mirages. "Elkan" 6 pages including 8 photos of Chilean-modified Mirages. "Les Mirage du Pakistan" 4 pages including 10 color photos. Short notes and color photos of Danish F-16 and Swiss Hunters.

ALGERIAN MiG-17

Tom Young

In one of Nick Waters' wonderful articles on the world's MiGs (SAFO #36) there is an illustration of an Algerian MiG-17 '05'. Although the aircraft drawn is a Fresco C, the caption states that this aircraft has been reported as a MiG-17PF Fresco D with a radar nose.

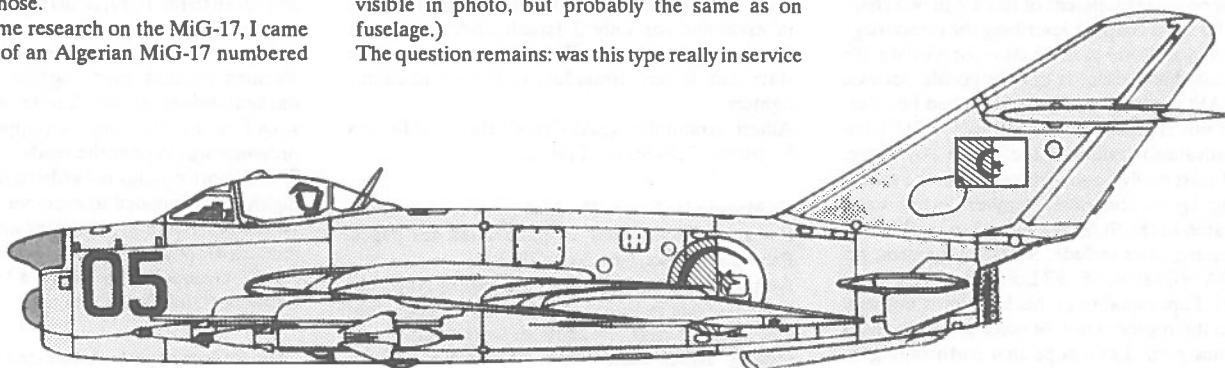
While doing some research on the MiG-17, I came across a photo of an Algerian MiG-17 numbered

'05' in the Czech magazine L+K, 3/1967. This aircraft is definitely a MiG-17PFU Fresco E with missiles and no guns. (Note: '05' in red; drop tanks shown in photo, but not shown on sketch; roundels without bars per SAFO drawing; wing roundels not visible in photo, but probably the same as on fuselage.)

The question remains: was this type really in service

with the Algerians, or was it a Soviet publicity photo? Does anyone have photos or hard information on the MiG-17 in Algerian service?

Tom Young (SAFCH #56), PO Box 159, Olema, CA 94950, USA.



GRUPO AEREO DE HELICOPTEROS: PARAGUAYAN AIR FORCE

Antonio Luis Sapienza

The first two helicopters acquired by Paraguayan Military Aviation were Bell 47Gs which were bought new directly from the Bell Factory under the export licenses E27574 and E27575 in October and July 1955. They arrived in Paraguay that same year where they were given serials H-001 (c/n 1321) and H-003 (c/n 1330). These helicopters were intensively used in the FAP. In 1964, they received IRAN inspection at Campo Dos Afonsos in Rio de Janeiro, Brazil, and they remained in active service until 1970.

In 1972, the American Government donated ten Bell 47G/H13 to the FAP through the Military Aid Program (MAP). Unfortunately, there are no records in Paraguay of the c/n's of these helicopters. Since the original two Bells had been withdrawn from service by this time, the MAP H13s were serialised starting again from H-001 to H-019 (odd numbers only). When these Bells arrived in 1972, the "Seccion de Helicopteros" (Helicopter Section) was created within the Grupo Aereo de Entrenamiento y Transporte (GAET). The last of these H-13 were withdrawn from service in 1986.

In 1981, the Chilean Air Force (FACH) donated two Hiller SL4 to the FAP. These were given serials H020 (c/n 2521, ex-FACH H-70) and H-021 (c/n 2531, ex-FACH H75). The following year, the FAP acquired another Hiller, a SL4T (c/n unknown) which became H-022. These Hillers were retired from active service in 1987 and later sold.

In 1982, two Bell UH1Bs were bought from the US and given serials H-023 (c/n 412, ex-US Army 621892) and H-024 (c/n 711, ex-US Army 6212553). Both UH-1Bs and the Hillers were used that year to evacuate people from several towns on the Paraguay River during the worst flood of the century. UH-1B H-023 was withdrawn from service in 1987 and H-024 in 1991.

On 2 January 1985, the "Seccion de Helicopteros" was renamed the "Escuadron de Helicopteros" (Helicopter Squadron) of the GAET. Two years later, the FAP acquired four Helibras HB-350/UH-50 "Esquilo" (Brazilian built version of the Aerospatiale Ecureuil) which were given serials H-025 (c/n HB.1085), H-026 (c/n HB.1088), H-027 (c/n HB.1092, later re-serialised H-001 for Presidential use), and H-028 (c/n TB.2114). In 1988, the "Escuadron de Helicopteros" received its present name: "Grupo Aereo de Helicopteros" or GAH (Helicopter Air Group).

The most recent acquisitions are a Hughes 269A (c/n B507, ex ZP-HAC) from the local market, which was serialised H-029 in 1989, and, in 1994, an Agusta A.109A Mk.2 Plus (c/n 7414, ex N88FA) for presidential use. This latter has not yet been given a FAP serial, but it probably become H-001 and the Esquilo with this serial will probably return to its old serial, H-027.

The present fleet of the GAH consists of three Helibras UH50 Esquilo, one Hughes 269A, and one Agusta A.109A. The GAH's main duties are transport, SAR, COIN (with the Esquilos), liaison, reconnaissance, and Presidential transport. The unit is located at Nu-Guazu AFB near Asuncion.

Since 1989, the GAH has been waiting for Bell UH1Hs promised by the American Government, but these have not arrived so far.

scheme: Cockpit, fuel tank, vertical stabilizer, tail fin, and tail-rotor frame were orange (HU082). The main tubular frame was painted black (HU033), as were the landing skids and the blades of the main rotor. The hub of the main rotor was silver (HU011) and the engine was matt iron-grey (HU092). The tips of the landing skids and the tips of the blades of the main rotor were yellow (HU069). The tail rotor was black with redwhitened tips. The first two Bell 47s carried the Paraguayan roundel on both sides of the cockpit and the serial was painted in black under the roundels. A tiny Paraguayan flag was painted on the tail fin. Not all MAP H-13s carried roundels. On these helicopters, the initials "FAP" were painted in black on both sides of the cockpit and the serial was painted in black on the fuel tanks. They also carried tiny Paraguayan flags on the tail fin.

2. Hiller SL4; Engine, rotor hub, main rotor blades, and tail rotor blades were painted the same as for the H-13s. However, the SL4s were an overall gloss white (HU022) with the upper part of the cockpit painted gloss orange (HU018). An orange arrow was painted on both sides of the rear fuselage and the serials were painted in black on the doors. The inscription "HILLER SL4" was painted in black on the fuselage and the title "FUERZA AEREA PARAGUAYA", also in black, was painted on the orange arrows. Landing skids were black.

3. Hiller SL4T: Engine, rotor hub, main-rotor blades, and tail-rotor blades were the same as for the H13s. However, the SL4T carried a two-tone grey camouflage of dark sea grey (HU164) and light aircraft grey (HU166). Paraguayan roundels were carried in four positions on the vertical stabilizer. The skids were black and the serial and the inscription "FUERZA AEREA PARAGUAYA", both in black, were in the same position as on the SL4s.

4. Bell UH1B: They were painted in a two-tone grey camouflage scheme similar to the one used on the SL4T. The title "FUERZA AEREA PARAGUAYA" was painted in black in the rear fuselage followed by the roundel. The serials were painted in three positions: on both sides of the vertical stabilizer in black and on the nose in white. The nose is black as well as the landing skids. The main rotor hub is silver and the blades are dark green (HU116) with yellow tips. The tail-rotor blades are silver (HU011) with a red stripe in the middle and white tips.

5. Helibras UH50 Esquilo: All HU50s are painted in a camouflage of dark green (HU116), matt olive drab (HU066), and matt sand (HU063) with lower surfaces in matt light grey (HU147). The main rotor hub is white and the main rotor blades are blue (HU025) with yellow tips as are the tail-rotor blades. The landing skids are black (HU033) as is the nose. Emblem #2 (see below) is painted on the nose. The title "FUERZA AEREA PARAGUAYA" is painted on the rear fuselage in black followed by the roundel. The Paraguayan flag is painted on the vertical stabilizer as are the initials "F.A.P." and the serial. The last two digits of the serial are also painted under the front door in black.

6. Hughes 269A: The Hughes are painted in dark green (HU116) and dark brown (HU186). Skids are black, as are the main-rotor blades. The title "FUERZA AEREA PARAGUAYA" is painted on the rear fuselage in black followed by a tiny roundel. The initials "FAP" and the serial are painted on both sides of the fuel tank.

Color Schemes

1. Bell 47G/H13: All H13s were painted in the following

7. Agusta A.109A: This chopper has not received a FAP color scheme as of February 1995. It was delivered in a scheme of overall gloss white (HU022) with the American registration in grey on the rear fuselage.

Emblems

1. The emblem used during the Bell H13 era. Edges and titles are black on a white background. The dragonfly, on a light blue background, wears a helmet with a Paraguayan roundel and carries a white package. The dragonfly is camouflaged dark green and dark brown.

2. The second emblem of the GAH. Yellow edges and titles on a blue background with a yellow sword over yellow chopper blades on a Paraguayan flag surrounded by yellow olive branches. This is the emblem painted on the nose of the Esquillos.

3. The third emblem of the GAH. Black edges and titles on a white background except for the motto "Arma Nueva, Misiones Nuevas" which is on a yellow background. A dark green and dark brown chopper on a blue background is at the center of this emblem.

4. The latest emblem of the GAH. Black edges and titles on a white background. Similar to emblem #3, but the chopper is now clearly a camouflaged Esquilo on a light blue background.

Photographs (See pages 33-34)

a. Bell 47G.2, H-003, over Nu-Guazu AFB, December 1955. (Fragnaud File via author)

b. Bell H-13H, H-013, at Nu-Guazu AFB, 1976. (FAP Files via author)

c. Hiller SL4, H-021, Nu-Guazu AFB, 1982. (FAP File via author)

d. Hiller SL4T, H-022, Nu-Guazu AFB, February 1987. (Author)

e. Bell UH-1B, H-024, Nu-Guazu AFB, January 1990. (Author)

f. Helibras UH-50 Esquilo, H-026, Nu-Guazu AFB, March 1994. (Author)

g. Hughes 269A, H-029, Nu-Guazu AFB, July 1990. (Peter Steinemann via author)

h. Agusta A.109A Mk. II Plus, H-001(?), Asuncion International Airport, December 1994. (Author)

Acknowledgements

The author would like to thank Dan Hagedorn of the Archives Division of the National Air and Space Museum for the historical data of this article. Thanks are also expressed to Lt. Col. DEM Luis Ocampos, Public Relation Chief Officer of the FAP for the information on the present GAH and some photos.

Antonio Luis Sapienza (SAFCH #1160), Casilla de Correo 2721, Asuncion, Paraguay.



LITTLE KNOWN AIR FORCES OF THE 1920s

Part 5: Ethiopia and Morocco

Lennart Andersson

Ethiopia

Ethiopia turned to Germany and France for the country's first aircraft acquisitions. A Junkers W 33 was ordered from Germany via the Steffen & Heyman firm in 1928. It arrived at Djibouti in April 1929 and was flown by H W von Engel to Addis Abeba on 5 September. It crashed already on 19 December but was later repaired. The first aircraft to land at Addis Abeba, on 18 August 1929, was a Potez 25A2 that had been delivered to Djibouti in June and was flown from there by the French pilot Andre Maillet. The remaining two of this three-aircraft Potez order arrived on 22 September.

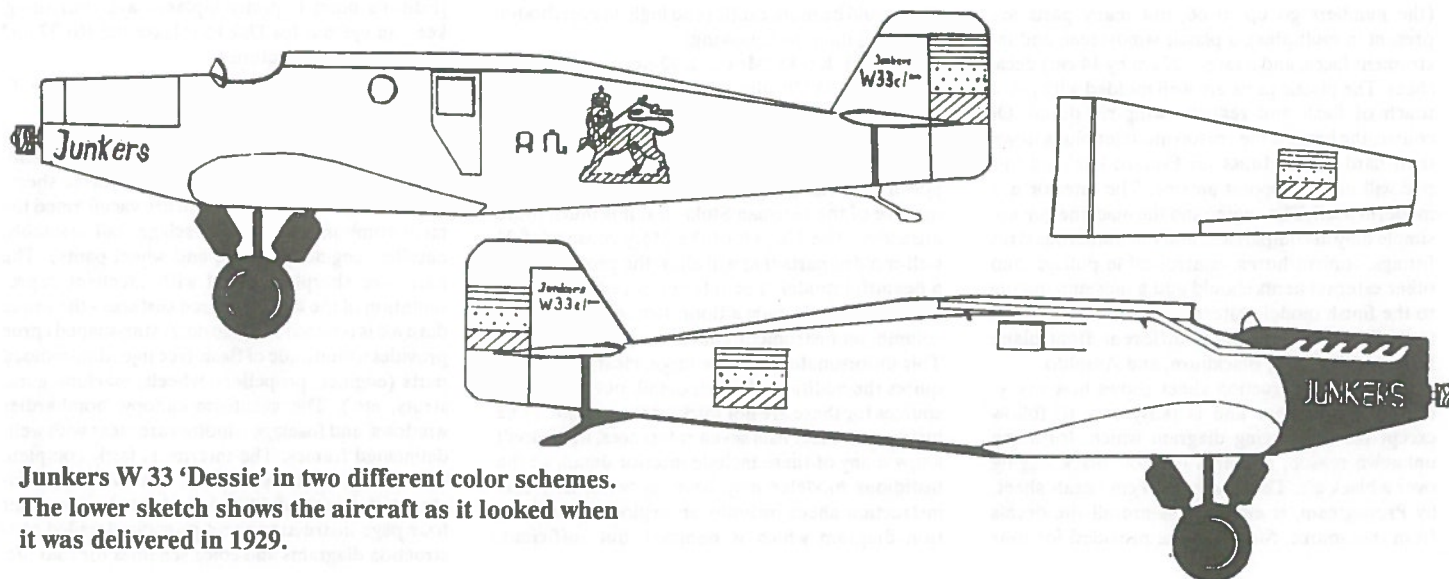
Maillet was employed as head of the new air force, but he was replaced by Paul Corriger in 1930. Corriger remained until 1935. A French flying instructor, Gaston Vedel, and a number of French mechanics were also employed. Another three Potez 25s, a Fiat AS-1 trainer and a Farman 192 were acquired (the Fiat was lost in a crash in July 1930). At the occasion of the emperor's coronation on 2 November 1930 two aircraft were received as gifts: a two-seat Breda 15 and a second Farman 192, the last-mentioned arriving on 4 November with Capt. Marie at the controls. When visiting Ethiopia a DH 60M Moth registered F-AJKT "Safari III" and flown by a French pilot was commandeered, probably in April, and incorporated into the Ethiopian air force.

A few transport aircraft were later acquired by or given to Ethiopia for ambulance work in 1934-35.

Qty	Date	Type	Notes
1	8.29	Potez 25A2	s/n 1 'Nesre Tafari'
2	9.29	Potez 25A2	s/n 2 'Nesre Asfawossen'
			s/n 3 'Nesre Makonnen'
1	9.29	Junkers W 33c	c/n 2539. 'Rigbe Tafari', later 'Dessie'
1	1929	Fiat AS I	
1	(4).30	DH 60M Moth	c/n 1443, ex F-AJKT
1	(6).30	Farman F.192	'Nesre ...'
3	mid.30	Potez 25A2	s/ns 4-6
1	11.30	Breda Ba 15	
1	11.30	Farman F.192	



This Ethiopian Air Force Potez 25A2 was delivered in September 1929 and was named 'Nesre Makonnen'.



Junkers W 33 'Dessie' in two different color schemes. The lower sketch shows the aircraft as it looked when it was delivered in 1929.

Morocco (Rif Republic)

In August 1925, it was reported that Abd el Krim at Tetuan, in Morocco, was about to form an air force. Abd el Krim, leader of the Rif tribes, started the successful uprising against the Spanish supremacy in 1920 and a Rif Republic had been proclaimed in 1922. In 1925 Abd el Krim controlled most of northern Morocco from his capital at Ajdir.

As early as March 1924, it was rumored that a foreign pilot had been employed and that aircraft sheds had been built at Alhucemas. This prompted the Spanish Air Force to bomb the place. In May 1925 it was reported that Abd el Krim had an aircraft for which he had paid ten times the original price, that it had flown only 40 minutes and that the Rifs also had an aircraft which they had captured from the Spaniards. A Dorand AR transport aircraft with French civil registration was allegedly acquired some time around June 1925 but a reputed order, in October 1925, for five Fokker aircraft was certainly not carried out. After large French and Spanish troop reinforcements had arrived, Abd el Krim was defeated and he had to capitulate in May 1926.

At the moment nothing more is known about this really "small" air force...

Lennart Andersson (SAFCH #68), Tiundagatan 52B, S-752 30 Uppsala, Sweden.

a overall white Italian ambulance version with large red crosses on the fuselage and wings; an Italian transport with green with yellow mottling upper-surfaces, gray undersurfaces, and Russian Front markings; an Ethiopian-based Italian bomber in overall white with red diagonal striping on the upper-surface of the wing; and an Austrian bomber with a camouflage of dark brown, green, and light gray over black. The large decal sheets (14.5 cm by 20 cm) provides all the markings for the above four a/c (including the red stripes).

In summary, the USK kit of the Caproni Ca-133 is a first-class vacuform kit that should be easy to put together (ideal for your first "large" vacuform kit), and will result in an eye-catching model no matter which scheme is decide to use. (The hardest part of the building this kit should be deciding which scheme to use.)

AeroClub, 5 Silverwood Ave., Ravenshead, Nottingham, NG15 9BU, England.

This was the first opportunity I've had to review any of John Adams' new kits for a number of years, and I was pleasantly surprised by direction taken by the evolution of his line of kits. The last kits I had seen had injection molded flying surfaces, but vacuformed fuselages. These new kits are entirely injection molded. They still feature the clear vacuformed canopies and white-metal parts for which AeroClub is justifiably famous, but they now also include decals and, in at least one case, etched-brass. The only disappointment is that the instruction sheets have not improved. The narrative description of the construction process leaves the modeler pretty much on his/her own in putting together all the small fiddly bits. The drawings of the color schemes vary from outstanding to barely acceptable. In summary, these are excellent kits for the experienced modeler wanting to build something out of the ordinary.

Pilatus PC-9, 1/72-scale. K017. L745.

This rakish Swiss-built trainer, and its predecessor PC-7, is being used by a large number of small air forces, and, therefore, is an attractive subject for the modeler interested in the small air forces. AeroClub's kit of the PC-9 consisted of six parts (2 fuselage halves, single-piece wing, vertical and horizontal tail surfaces, and cockpit floor) molded in tan plastic. As is typical for a short-run injection-molded kit, the gates are thick and the detail a little mushy. The purest will probably claim the trailing edges of the wing are too thick, but I find them acceptable. The inscribed surface detail is a little light and could benefit from rescribing, especially the separations of the control surfaces. The vacuformed canopy is large and clear, which requires quite a bit of detail in the cockpit. This is provided in spades: two control columns, two metal seats with separate head rests, and two etched brass frets (each 3 cm by 2.5 cm) for detailing the ejection seats. Surprisingly there are no instrument panels, but these can be cast from those provided with the PC-7 (see below). Other metal parts provide are the 4-bladed propeller, spinner, 2 exhausts, nose wheel assembly, 2 wheels, and 2 landing-gear legs. The instruction sheet provides a drawing and color information for the ejection seat, but construction detail is absent, so I expect that only a modeler with considerable experience in constructing ejection seats will fully benefit from the bass parts. 1/72-scale 5-view drawings are given for RAAF 'A23-001' and a side-view drawing for Swiss 'HB-HQE'/British Aerospace 'ZG 969'. A small decal sheet (6.5 cm by 5 cm) provides all the markings for these a/c. I will probably ignore these decals and build mine as a camouflaged Cyprian Air Force

PC-9 as described in issue 2/94 of IPMS-Greece's NEA.

Pilatus PC-7, 1/72-scale. K026. L745.

AeroClub's kit of the PC-7 is very similar to their PC-7, so don't open them at the same time or you may get the parts mixed up (as I did). There are subtle differences in the wing tips, front fuselage, and canopy. The metal parts are entire different: non-ejection seats, 3-bladed propeller, etc. All the comments above about the quality of the parts and the instruction apply here. The side-view drawings do not include one with the landing down, so the position of the nose wheel and shape of the landing gear doors (which have to scratch built) will have to be inferred from the bottom plan view. The instruction sheet provides a 1/72-scale 4-view drawing of a Bolivian a/c 'FAB-467' and side-view drawings of 'FAB-450', Swiss 'A-903', and Burmese '23-12'. The decal sheets (there are 3) provide the markings for these aircraft. The Swiss sheet (9 cm by 7.5 cm) is rather prosaic, the Burmese sheet (7 cm by 7.5 cm) is rather unusual, but pride of place belongs to the Bolivian sheet (7.5 cm by 11 cm) which features the large colorful eagle's head for the front fuselage of 'FAB-467'. This latter will probably be the choice of most SAFO-readers.

Fiat CR.20, 1/72-scale. K031. L6.65.

Now we come to something entirely different; a tiny, between-the-wars, biplane fighter. The use of the CR-20 by Austria, Lithuania, and Paraguay makes this kit an attractive choice for SAFO readers. The 6 plastic parts are well molded with thin, accurately-cambered wings with razor-sharp trailing edges and properly-subdued wing-rib detail. The metal parts include seat, instrument panel, engine cowling, radiator, propeller, "park-bench" balances for the ailerons, wheels, landing-gear struts for the CR-20bis, and struts for the unusual wing bracing. The wing struts have quite a bit of flash, which is unusual for AeroClub. Two lengths of plastic strut material are provided, either to replace the metal struts or to scratch build the alternate landing gear structure of the CR-20. The instruction sheet provides a 1/72-scale, 3-view drawing; sketches of the cockpit interior and strut design; and side-view drawings for two Italian a/c (CR-20 '1-72' and CR-20bis '3-82'); and a Paraguayan CR-20bis of the Escadron de Casa los Indios with the familiar red Indian archer on the side of the fuselage. The large decal sheet (15 cm by 7.5 cm) provides the markings of all these a/c. Unfortunately, the drawings are not clear enough to determine the order of the red/white/blue stripes on the wings of the Paraguayan a/c. The SAFO modeler will want two of these kits, one for the Paraguayan a/c and one for a Lithuanian a/c with decals provided by Blue Rider's BR216. And, how about a third for a CR-20 Idro? See Aerofan issues 2 and 3 1988 for photos and drawings of the CR-20 in all its variants. (Review kits provided by AeroClub.)

[Editor's note: The April issue of *Modelo Terapia* (Paraguay), which arrived just before this issue went to press, contains an article on the Paraguayan CR.20. I'm sure the editor, and SAFCH member, Antonio Sapienza will not mind if I publish his drawing and extracts of his comments. "Five Fiat C.R.20 bis fighters were acquired by the Paraguayan Air Arm in order to replace the Wibault 73 C.1 in 1933. They arrived in Asuncion in April. Soon after, the 11th Fighter Squadron was formed, and it was known as 'Los Indios' (The Indians). They were serialised 11-1, 11-3, 11-5, 11-7 and 11-9. 11-1, 11-3 and 11-9 were lost in accidents during the Chaco War, killing two pilots. 11-5 and 11-7 survived the war and they were reserialled C-1 and C-2. C-2 was lost in an accident in 1939 and C-1

was withdrawn from service in 1941." The drawings (reproduced elsewhere in this issue of SAFCH) and my meager knowledge of Spanish support these corections to the AeroClub kit: (1) The a/c is silver overall, not 'pale linen', (2) the wing bands are diagonal, not parallel to the chord, (3) the leading edge of the horizontal stabilizer of the Paraguayan Fiats was straight, not curved, and (4) the a/c serial '11-5' below the 'Fiat CR.20bis' on the rear fuselage is missing from the decals.]

Breda Nardi NH 500 (Hughes H-500): 1/48-scale, injection-molded kit with resin parts. Astrokit.

The Astromodel firm, Italian agent for Academy/Minicraft, recently released a mixed-media kit of this ubiquitous helicopter in a gaudy Guardia di Finanza (Italian Custom Guard) color scheme. The plastic parts are identical to the Minicraft kit and represent a late-production H-500 with T-tail and five-bladed rotor. However, the real boon is a bag of beige resin parts, very clean and bubble-free, designed to replace and augment the plastic parts. These comprise some 15 parts including a new cockpit panel and center console, a four-blade rotor hub, V-shaped tail surfaces, inflatable floats, plus some smaller details and antenna. The floats will need a little cleaning up of a length-wise horizontal seam and the plastic skid struts require some shortening to fit.

A nice touch is the provision of sewing marks on the floats to represent repairs; the instructions specify that you can fill them, if you want, and in fact the helo on the box cover photo has new floats. "The Italian version of this helicopter has enlarged windows in the lateral access doors for observation duties; these windows are provided on a separate acetate sheet and you have to enlarge the window opening in the original kit to fit them.

"The very clear instructions are written in English, but include 5-language general directions. These include dimensions for the small surgery needed, the position of every new item, and the length of two small stretched sprue aerals you must add.

The last page of the instructions details the color schemes. Two versions are described: a NH 500MC coded "GdiF - 70" with four-bladed rotor and V-shaped tail; and a later NH 500MD "GdiF - 117" with T-shaped tail surfaces. Both bear the same color scheme: bright yellow overall with bright green fuselage top and bottom that is standard for Guardia di Finanza aircraft. The separately-bagged decals, by Tauromodel, are printed to their usual high standard with perfect register and dense colors; as an added precaution, the central green spot of the Italian roundel is printed separately. The small fox badge is really beautiful.

The kit comes in a sturdy, if somewhat too large, box with a glossy picture of the real "GdiF - 70" in flight over the Italian countryside. This photo is very useful in clarifying some details of the color scheme and of the floats.

All in all, this is a very competent kit of a very common helicopter. By using different mixes of resin and plastic parts (and a little surgery on the skids), it is possible to obtain every version of this small helicopter.

"This kit is available from: Il Soldatino Modellismo, viale Umbria 41, 20135 Milano for 29,000 lire (about \$20) plus postage, or directly from the producer: Astromodel, via M. Lercari M/5, 16126 Genova.

A 1/48-scale kit of the Bell 206 JetRanger in Italian Army markings, is also available and a 1/48-scale all-resin kit of the Macchi MC.200 fighter has been announced.

Mario Bartoli, (SAFCH #719), via R. Fucini 48,

"Enclosed are two new items for review in SAFO. These have been made by my friend and myself in Finland. The first is a 1/72-scale, vacuform kit of the Finnish Valmet Pyry trainer. Only 100 kits have been made, mostly for sale to Finnish modelers, but about 50 will be set aside of modelers abroad. Since so few of these kits have been produced, the price is quite high - US \$20 including postage.

"The second item is a white-metal casting of the Russian M-62 engine in 1/72 scale. The price is US \$5. Our mutual friend, Greg Reynolds, sent me the M-62 engine made by Engine & Things in Canada. Our's is much better.

"Our next kit is almost ready - the Valmet Vihuri trainer. The first pre-production kits have been successful, but we are waiting for the white-metal parts (airscrew, engine, wheels, landing gear, and spinner). Our next engine will be the M-85. By the way, our Polish friend, Mr. Brozek of Broplan, has also made a kit of the Pyry using the plans I sent him, but in 1/48 scale." [Editor's note: See review of Broplan kit below.]

Tapio Huttunen (SAFCH #1169), Kaukantie 22, 45740 Kuusankoski, Finland.

Valmet Pyry, 1/72-scale, vacuform kit. Fin Scale. See letter directly above.

The Valmet Pyry is a low-wing, fixed gear trainer built in Finland. The prototype first flew in 1939 and 40 others were built for the FAF. With its elliptical wings and large green-house canopy, it is an attractive a/c that can be finished in either green/black/light grey camouflage with the FAF blue swastika or a striking scheme of green fuselage and orange horizontal surfaces with FAF roundels. The kit is molded on a single sheet of thick white styrene. Despite the fact that this is the thickest plastic I've ever seen used for a vacuform kit, the engraved surface detail is excellent. Because of all the sanding that will be required, it might be easier to replace some of the smaller parts with items from the spare-parts box. Of the larger parts, only the propeller seems usable. The large canopy is clear and well molded.

The instruction sheet consists only of a parts diagrams, an exploded construction view, and an inboard profile. There are no drawings for color schemes and no decals. For color schemes consult such references as "Suomen Ilmavoimien Len-

tokoneet 1939-72" by Kalevi Keskinen.

The Fin Scale kit of Pyry allows the modeler to add an attractive and unusual model to his/her collection of aircraft of the small air forces. (Review kit provided by Fin Scale.kits- section of this issue of SAFO.)

M-62. This is a superb casting of the 9-cylinder Russian engine. There is absolutely no flash and the details are crisp. You should be able to pop this right into your model without further ado. The instructions are in Finnish, but I gather that the M-62, or the very similar M-25, was used in the following a/c: I-15, I-152, I-153, R-10, I-16, Li-2, KOR-1, KOR-2, VL Humu, DI-6, An-2, & GST.

Broplan vacuform kits; Janusz Brozek, ul. Pilotow 10G/33, 80-460 Gdansk, Poland.

Janusz Brozek is one of the most prolific producers of vacuform kits in 1/72 scale and mostly of aircraft of Polish origin or, at least, connection. Two of his latest releases follow this pattern, but the third breaks new ground in that it is in 1/48 scale and the subject is entirely Finnish. The quality of these kits remain uniformly good, with sharply molded parts on medium-thickness white plastic, with inscribed panel lines and clearly-molded vacuform canopies. All Broplan kits can be warmly recommended to all with experience in building vacuform kits.

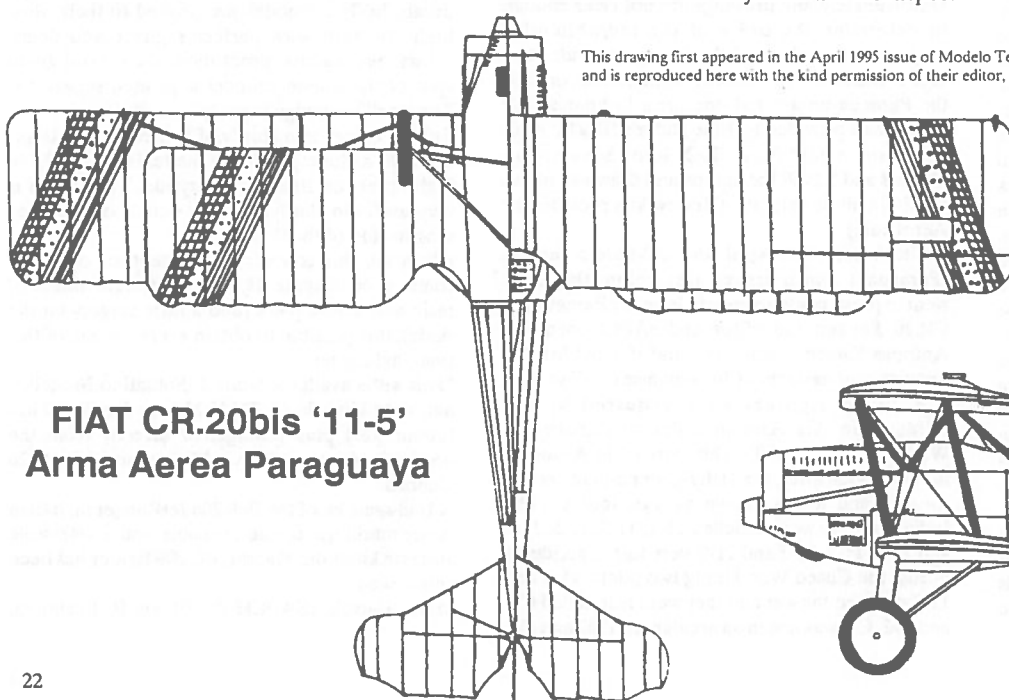
Fokker F-VII/1m, 1/72-scale. MS-23. The single-engine version of Fokker ubiquitous transport began Polish service as a civil transport with LOT powered by a Lorraine-Dietrich water-cooled engine. Later it was re-engined with a Jupiter air-cooled radial engine. Finally, they were used by the Polish Air Force for radio-navigation training.

The Broplan kit of the F-VII/1m is nicely molded on three sheets of white plastic. A vacuform windscreen and a flat piece of clear plastic for the windows on the passenger compartment complete the kit. The instruction sheet contains an exploded construction diagram and a 3-view drawing of 'P-POZM' in LOT markings. The review sample did not contain decals, but I suspect that these will be included with production kits since the style of the registration would be hard to find elsewhere and the "Fokker" name impossible to produce from scratch. The finished model, with yellow wings and blue and white fuselage, would make an attractive addition to any collection of pre-war civil aircraft. Conversion to the Jupiter-engined version should not be too difficult if you want a transport

registered in the 'SP-' range or a more militant PAF version. Since the wing span of the F-VII/1m was less than that of the F-VII/3m (19.31 m vice 27.71 m) converting from this kit would be easier than starting with a kit of the F-VII/3m.

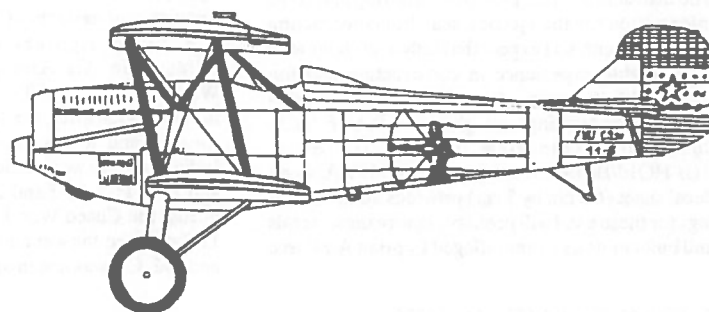
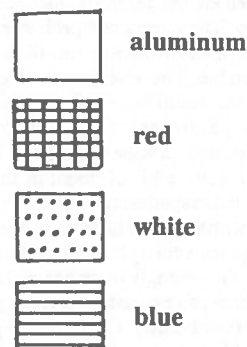
Lim-6bis, 1/72-scale. MS-27. This is another in the Broplan series of Polish-built MiGs. The Lim-6bis was a Polish modification of the MiG-17F, 70 of which were used by the Polish Air Force and Navy. Nice molded on two sheets of white plastic with a clear canopy, this kit should be easier to build than any attempt to 'Polishize' either the Hasegawa or KP kits. The instruction sheet includes the usual exploded construction diagram and a multiview diagram of a camouflaged a/c '418' and '426'. Again, no decals were included with the review sample, but since the style of the codes is so unusual, they will probably be included with production kits. This kit is recommended to anyone intending to build a representative collection of either Polish jet fighters or MiG fighters in general.

VL Pyry, 1/48-scale. MS-28. The Fin Scale 1/72-scale kit of the VL Pyry is reviewed above. Molded on two sheets of white plastic, the 1/48-scale Broplan kit contains more detail than provided with the Fin Scale 1/72-scale kit. The interior consists of floor, side panels, seat frame, two seats, rear bulkhead, front and rear instrument panels, and two control sticks. All this is appropriate since the enormous cockpit canopy is thin and clearly molded. Construction should be straight forward and a nice touch is the triple wing-spar structure, with built-in dihedral, that passes through the fuselage to supports the wing. Three sets of landing gear are provided: exposed wheels, pants for these wheels, and skis. The only disappointing parts are the engine and propeller, both of which, I suspect, can be replaced with something from the AeroClub range of metal accessories. The instruction sheet contains the usual exploded construction view and a 3-view drawings of 'PY-27' in its attractive green and orange finish with Finnish post-war roundel. No decals were provided with the sample kit, and I hope this will be corrected in the production kits since not only would the proper-size roundels would be difficult to obtain, and finding the proper style the codes could be a problem. (Review kits provided by Broplan.)



FIAT CR.20bis '11-5'
Arma Aerea Paraguaya

This drawing first appeared in the April 1995 issue of *Modelo Terapia* (Paraguay) and is reproduced here with the kind permission of their editor, Antonio Sapienza.



Croatian MiG-21bis and Mi24, Mach, c/o Vojislav Jereb, Matka Laginje 11, 51500 Krk, Croatia. Tony Morris, of England, has sent some decals, produced by his friend in Croatia, for review. There are three sheets: two for the MiG-21bis (identical except for sale; one in 1/72 scale and the other in 1/48 scale) and one for a Mi-24 in 1/48 scale. The 1/48-scale MiG-21 sheet measures 8 cm by 11 cm and includes all the markings for a/c '102': fin flash, national markings in both the red-white shield (with provincial shields above) and the blue disc with two red squares, the black-knight squadron crest, the individual insignia (Vubrovnik Avenger), a/c number, and pilot's name (Ivan Selak). The only thing missing is the pilot's nickname (Divljak = Wild Man). The 1/72-scale sheet is identical except it measures only 5.5 cm by 7 cm. The Mi-24 sheet includes only the tail warning stripe (Opasnot!) and the blue disc/red squares national insignia. Unfortunately, the checkered-shield is not included, but those on the 1/48-scale MiG-21 sheet can be used.

The quality of printing on these sheets is absolutely fantastic. All lettering is completely legible, even in 1/72 scale. The review samples did not include instruction sheets, and I do not know if these are available. However, MiG-21 '102' was well covered in SAFO #69 and a follow-on article on the MiGs with the blue/red national insignia is in the works. Can anyone suggest a reference for the Croatian Mi-24s? These sheets are available from the above address at about \$1 per sheet. This is a ridiculously low price for such high-quality decals. I suggest you add a dollar or two to encourage the production of more decals from this source.

Dutch Decals. Luc H. Boerman, Kerkstraat 2, 2471 AP Zwammerdam, The Netherlands. Also available from Meteor Productions, PO Box 3956, Merrifield, VA 22116, USA.

Dutch Decals has recently released two new sheets in 1/72-scale for Dutch a/c. These two new sheets continue the high quality we have come to expect from Luc Boerman. They measure the usual 21 cm by 15 cm and the quality of the printing and the density of the colors is outstanding. The 4-page instruction sheets are informative and complete with mutiview drawings showing the color schemes and the locations of the all markings and stenciling. These sheets are highly recommended.

#72025 **RNethAF Lockheed Hercules**, **RNethNavy Breguet Atlantic**, and **RNethNavy Sikorsky S-51**, 1/72-scale.

This sheet provides markings and stenciling for Hercules 'G-273', Atlantic '254', and Dragonfly 'Jezebel'. Included are the squadron insignia, titles ("Kon. Marine", "Royal Netherlands Air Force", "RNLAFF"), serials, codes, rescue arrows, an enormous amount of stenciling, and a plethora of "lines". There is so much that an extra sheet (20.5 cm by 6.5 cm) has to be included and, even so, there is no room for the roundels. Roundels must be purchased separately as sheet #72017.

#72026 **RNethNavy PBY-5A Catalina**, **Dornier Wal**, **Avro Anson**, **Airspeed Oxford**, **Spitfire FR XIVe**, 1/72-scale.

This beauty of a decal sheet provides markings for six flying boats; three Dutch PBY-5, one PBY-5A, and one Wal flying boat PBY-5A. Two of the Dutch Cats, 'Y-45' and 'Y-69' carries Dutch flags while serving out of Australia in 1942-43. The third '16-206' carries Dutch Roundels and served in the NEI 1946-50. The PBY-5A 'Y-74' is shown as marked for ferry flight from Corpus Christi USA to the NEI

in 1942; the orange triangles have been overpainted and USA stars are carried in four positions. (It would be interesting to know if Y-45 or Y-69 served in the NEI and, if so, if any mention of them can be found in "Bloody Shambles".)

The Dornier Wal 'D 41' served in the NEI 1931-42 and the gigantic wing roundels are included. However, before you run out to buy the Huma kit of the Wal, note that the instruction sheet warns, "You can not built the Wal directly from the box, you need a lot of scratch building!" (Perhaps one of our Dutch members, or IPMS-Netherlands, can provide us with a article on the modifications necessary to build a Dutch Wal.)

After these glorious flying boats, its easy to dismiss the other subjects on this sheets, but you do so at your own peril. The all-yellow Anson 'D-23' and Oxford 'C-14' will make attractive models. The bubble-canopies Spitfire is represented by only it code 'XC' and serial 'MT853'. Roundels for these latter 3 a/c are not included and have to be obtained separately on sheet #72017.

Tally Ho!, Aircraft Markings for the Modelling World, PO Box 2338, Sidney, BC, Canada V8L 3W6.

With Blue Rider doing decals for the early and current small air forces and Tally Ho! filling in between, the modeler of the small air forces should be in "hog heaven". The four latest releases from Tally Ho!, two in 1/48 scale and two in 1/72 scale, continue to be of the highest quality: sharp printing, vivid colors, and perfect registration. The instruction sheets are fantastic in that they not only show the color schemes and position of the markings, but provide more information on the history of the subjects than you would get in most magazine articles. Kits and accessories are recommended with comments that are always trenchant, and often wickedly witty. Let's see what these latest sheets have to offer.

Portuguese Fighters 1940-1950, 1/48 scale. #4206. \$4.00.

This 10 cm by 8 cm sheets covers five Portuguese fighters from WWII: Airacobra 'OK-G', Mohawk 'XY-C', Spitfire Mk.I 'XZ-A', Hurricane Mk.IIC 'VX-A', and Lightning 'OK-T'. Four types of fin flashes are provided including those with the complicated Portuguese coat of arms. Roundels come both with and without the white disc. All necessary serials and codes complete the sheet. The four-page instruction sheet begins with a history of Portugal's Aeroanutica Militar, 1937-1947. Then the service history of each type is described along with four-view drawings of the a/c. The drawings for the Portuguese Lightning is reproduced here; note the information about the camouflage of this a/c.

Finnish Gladiators Mk.II, 1/48 scale. #4207. Tally Ho! \$4.00.

This 10 cm by 8 cm sheet provides markings for three Finnish Gloster Gladiator from 1942: 'GL-264' with alligator on the vertical fin, 'GL-267' with yellow Eastern-Front markings and large serials on a British-style white/black wing underside, and 'GL-267' on skis. Somewhat puzzling is the inclusion of green single-digit numbers which are not shown on the instruction sheet. A cursory search of the SAFCH files turned up no photos of Finnish Gladiators with these numbers. The search did, however, turn up a error on the sheet; the serials should not all be black, but they should be in colors contrasting with the background camouflage.

Chinese Fighters 1937-1938, 1/72 scale. #7133.

\$3.00.

This small sheet (8 cm by 6 cm) provides four standard wings roundels (enough for one a/c) and pair of plain white wing insignia (for a CR-32 or Gladiator), but all the white codes for ten Chinese fighters (Hawk II '82', Hawk III '2208', I-152 '305', I-16 '2301', D-520 '4105', Hs-123 '1507', CR-32 '801', Gladiators '2802' & '3201', and I-153 '2706'). The four-page instruction sheets has a through discussion of Chinese air action during the period (including a map) and an extensive Modelling Notes discussing available kits. (The announcements of the MPD Hawk III and the Hasegawa I-16 were too late to be included). Each a/c is discussed and illustrated with side, top, and bottom views. Three kill markings are provided for one of the Gladiators. A small "erratum" sheet provides replacement serials for the D-510 and Hs-123 which to a little too large on the main sheet; a good example of the care taken by the people at Tally Ho!

Spanish Nationalist Fighters, 1/72 scale. #7218. \$4.00.

The large (10 cm by 8 cm) sheet includes roundels, serials, and squadron insignia for 12 Nationalist fighters (I-16 '1W-5' & '1-W-30'; I-15 '8-100', '32-2', & '33-4'; I-152 '2W-12'; He-112 '5-59' & '5-66'; Bf-109B '73-79'; Bf-109E '6-56' and '6-126'; and Bf-109F on the Russian Front). National insignia include both the back disc (with and without design) and the red/yellow/red roundels. The instruction sheet includes the usual complete history, drawings, and modeling notes.

Hungarian Ju-87D-5, 1/72-scale. HAD 72 005. Available from MILA Hobby Centrum, Hos u. 1, Budapest VIII, Hungary.

HAD continues their new series of 'wet' decals with a 7 cm by 9 cm sheet for a pair of Hungarian Stukas from 1944: B.70 + 6 of pilot Lance Sergeant Sandor Horvath and gunner Lance Sergeant Jozsef Hosszu, and B.6 + 31 of pilot Captain Gyozo Levy and gunner Lance Sergeant Lajos Sarkady. The decal sheet itself is deceptively plain with black/white Hungarian crosses, black codes, and white a/c names 'Jiraso' and 'Evi'. However, the decals are exceptionally well printed and the instruction sheet includes all the information needed, with English translations, to accurately mark each a/c.

Blue Rider Models, 43A Glasford St., London SW17 9HL, England.

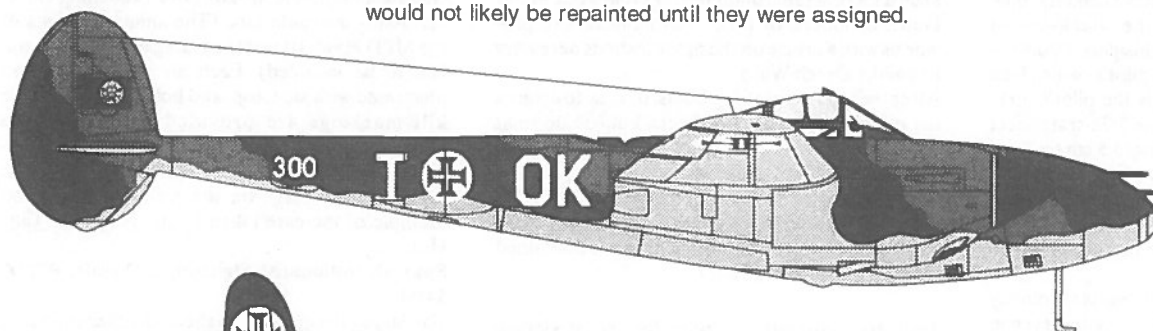
What can you say about these decals after you say they're from Blue Rider? You know they are going to be first rate; excellent printing, vivid colors, perfect registration, comprehensive instructions, and unique markings. I am amazed that Blue Rider can make a commercial success out of such exotic subjects. Are there more closet small-air-force modelers out there than we imagine? Do models finished with these decals actually show up on the contest tables, or are these decals kept as works of art?

A unique attribute of Blue Rider decals is their consistent referencing of the sources for the schemes they use. It satisfying to note how many times SAFO appears as a source. If you have a favorite color scheme for which you would like decals, and if it falls within the purview of Blue Rider, write an article for SAFO and your wish may come true. Finally, I would like to thank Blue Rider for mentioning SAFO's address on so many of its instruction sheets. (Prices given below are from the

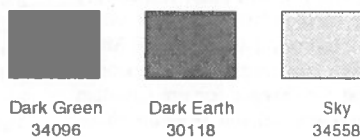
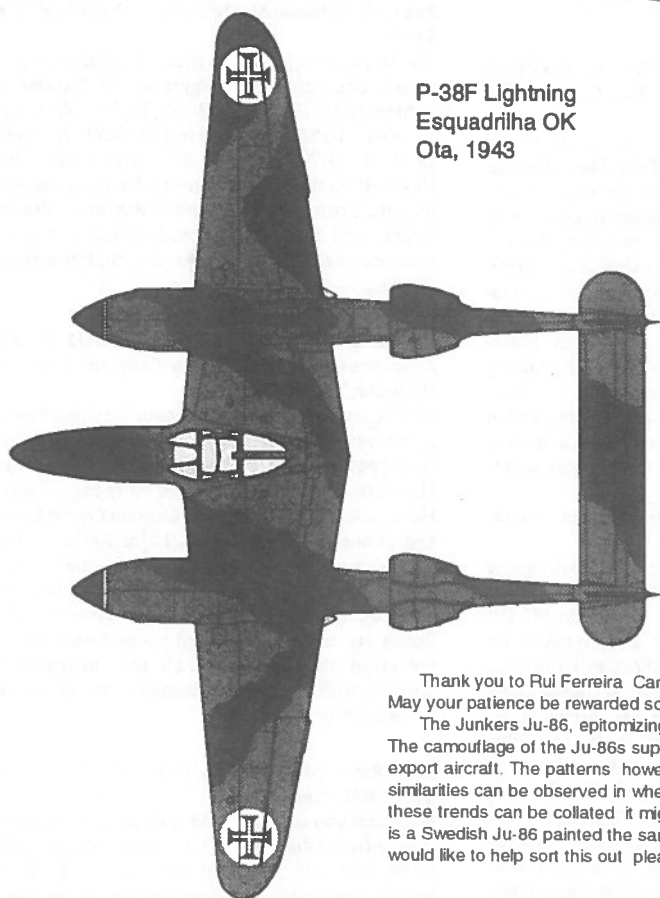
Portugal's Lightning - An Update



For years, illustrations of this aircraft have presented the colour scheme for this aircraft in standard USAAF camouflage of Olive Drab and Neutral Gray. In 1994 TALLY HO! released sheet #7134 for Portuguese fighters in 1/72 scale, and we followed convention in interpreting the few photos. Since the appearance of #7134, several people have written to point out that this aircraft was not Olive Drab and Neutral Gray, but instead had two-colour camouflage on the top surfaces, in a pattern consistent with that laid out for the P-38 by the British Ministry of Aircraft Production. The colours are most likely Dark Earth and Dark Green with Sky undersides, but there are other possibilities. Once the British had tried their P-38s they returned them to a central aircraft park for further distribution, and these aircraft would not likely be repainted until they were assigned.



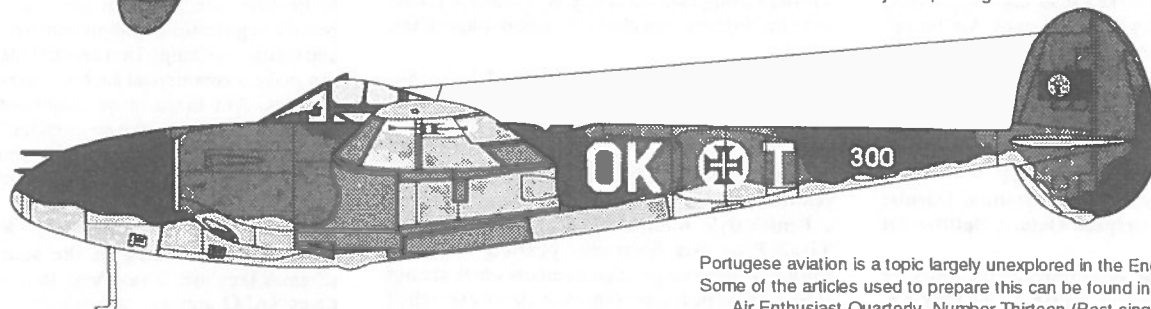
P-38F Lightning
Esquadriha OK
Ota, 1943



The Portuguese had but one P-38. This aircraft was one of two US Lightnings, so the story goes, which were en route to North Africa from England via Gibraltar. After losing their way, the pilots were pleased to finally find Lisbon beneath their wing, which they mistook for somewhere in North Africa. The first pilot landed and immediately jumped down from his airplane, anxious to not use the relief tube. His wingman also landed, and was taxiing in when he noticed the commotion at the main building and several cars converging at high speed. Realizing something was not quite right, he gunned his engines, regained the air and continued on his way to North Africa. His unfortunate colleague was not so lucky. The police arrived before he was able to finish and regain his aircraft, and he was interned and repatriated a few weeks later. His aircraft was impounded, given Portuguese markings and serial, and subsequently appeared whenever visiting generals and other notables came to Ota. This aircraft was eventually purchased from the US Air Force. Or so the story goes.

Thank you to Rui Ferreira, Carlos Oliveira, Phillip Camp, and the many others who have written with information and suggestions. May your patience be rewarded soon with decals for Portugal's Ju-86s, Ju-52s, and Gladiators too.

The Junkers Ju-86, epitomizing as it does all that is funky in late 1930s airplanes, had always appealed to me, so I appeal to you. The camouflage of the Ju-86s supplied to Sweden, Hungary, and Portugal is unique too, using the rare colours the RLM mixed for export aircraft. The patterns, however, remain an enigma. There was no set specification like there was for the splinter scheme, but similarities can be observed in where which colours were used, what relative size the bands were, where they meandered, etc. If these trends can be collated, it might be possible to draw a reliable picture of how these aircraft were camouflaged. Perhaps there is a Swedish Ju-86 painted the same as Portugal's "253" and we can glean what the top wing might have looked like. Anyone who would like to help sort this out, please send me sketches of Ju-86s and they'll be put to good use.



Portuguese aviation is a topic largely unexplored in the English language. Some of the articles used to prepare this can be found in:

Air Enthusiast Quarterly Number Thirteen (Best single reference)
Flying Review International: April June 1970 (Good general article)
Air International: v22n1 & 2; Jan Feb 1982 ()
Air Enthusiast Magazine:
Air Enthusiast Quarterly Number Twenty-Eight (Blenheim)
Air Forces International: July 1989 (Mohawk)
Scale Aircraft Modelling: April 1985 v7n7 (Blenheim)
Scale Aircraft Modelling: November 1988 v11n2 (Lightning)

Squadron Hobby Shop Supplement April 1995. These decals are also available from the SAFCH Sales Service.)

Colourful Camels, RAF Training Machines from 1918. A 1/72 scale double decal sheet set for two extremely colourful Sopwith Camels of the RAF during late 1918. BR225.

Two 13 cm by 16 cm sheets for the red & white checkered Camel and a white & red sun burst pattern Camel. Decals are included for the alternate interpretation of the colors used on the latter a/c.

RCF/RAF Canada Curtiss Jennies in the USA & Canada. A 1/72 scale decal sheet for the training squadrons of the Royal Flying Corps (Canada) and Royal Air Force (Canada). BR226. \$8.98.

Decals are provided for 14 Jennies on a 13 cm by 16 cm sheet.

Captive Allied Fighters in the German Air Force. A 1/72 scale decal sheet for four captured Allied aircraft of the Luftstreitkräfte used in action during World War One. BR227. \$8.98.

This 13 cm by 16 cm sheet provides markings for four a/c: Nieuport 11, Nieuport 17, Spad 7, and Sopwith Camel.

Serbian Aviation, Balkan War 1912/13 & WWI 1914/15. A 1/72 scale decal sheet for 4 aircraft of the Air Force of the Kingdom of Serbia during the period 1912-1915. BR228. \$8.95.

This 13 cm by 16 cm sheet provides markings for Serbian Henri Farman HF 20, two Bleriot XI, and a Maurice Farman MF.11. The insignia used during the Balkan Wars was a dark blue and red flag which was replaced by a similarly colored roundel in WWI. The sources for these schemes is the recently published (1993) book on 'Serbian Aviation 1912/18' and a series in American Cross & Cockade by our good friend Augi Blume.

Carinthian Air War, Post WWI Conflict between Austria and the South Slavs. Part I of a 1/72 scale decal sheet featuring 5 military aircraft of the National Council of the Serbs, Croats and Slovenes during 1918/19. BR229. \$8.95.

Aircraft covered are a Berg D.I with red/white/blue chevron national markings, and two Berg D.I and two Hansa Brandenburg C.I.s with similarly colored roundels. Sources are information obtained directly from enthusiasts in Slovenia. A full page of the instruction sheet is devoted to the history of this little-known conflict including a map!

Carinthian Air War, Post WWI Conflict between Austria and the South Slavs. Part II of a 1/72 scale decal sheet featuring 6 military aircraft of the National Council of the Serbs, Croats and Slovenes during 1918/19. BR230. \$8.95.

Same size sheet, same war, same side, but this time the a/c are a Phoenix C.I, UFAG C.I, Phoenix D.II, Phoenix D.I, and two Albatros (Oef) D.III.s. All these a/c carry roundels except for the Phoenix D.II which carries the chevron.

Royal Siamese Aeronautical Service 1920-30. A 1/72 scale decal sheet for five aircraft of the Royal Siamese Aeronautical Service during the 1920's. BR231. \$8.95.

Another 16 cm by 13 cm sheet. The source is credited to the series of article in SAFO written by John MacGregor. Aircraft covered are a Spad XIII, two Spad S.VII, and Nieuport 11 & 12. Translations are given for all the Siamese script.

Middle Lithuania Army Aviation 1920/21. A 1/72 scale decal sheet for two Breguet 14's during the brief period of Middle Lithuanian 'independence'. BR405. \$6.95.

This 13 cm by 11 cm sheet provided markings for two Breguet 14s; one carrying the 'national' insignia of a white-bordered red square on the port wing and a red-bordered white square on the starboard wing. As far as I know, this reversal of colors is unique in aviation history. The second Breguet is depicted after it return to Poland with Polish chessboards and a white eagle for an individual insignia. A short history (with map!) is included. The main source is Tomasz Kopanski's 1994 book on the '16th Eskadra Wywiadowcza 1919-20'.

Czechoslovakian Air Corps 1919-1921. A 1/72 scale decal sheet for a Phoenix C.I and two Spad VII's of the Ceskoslovenske Letectvo Sbor in 1919/21. BR406. \$5.95.

This 13 cm by 8 cm sheet provides markings for two Czech a/c: a Phoenix C.I and two Spad S.VII.s. The insignia are the early Czech roundel consisting for concentric rings of white/blue/red (from inside out). The main source is the book by Rajlich and Sehnal (1992) 'Ceskoslovenske Letectvo 1918-1924'. A short, but informative, historical background is included.

Bosnia-Herzegovina Presidency Air Force. A 1/72 scale decal sheet for two aircraft of the Bosnian Government Armed Forces (BiH) during 1992/1993. BR805. \$5.98.

With this 13 cm by 6 cm sheet, we move from an Eastern Europe in turmoil in the 1920s to an Eastern Europe in turmoil in the 1990s. Markings are provided for two a/c: a UTVA-75 and a Mi-8 Hip. Sources are again personal contact.

Slovak Air Force White Albatrosses Display Team. A 1/72 scale decal sheet for three L-39s of the Slovak Air Force's 'White Albatrosses' Aerobatic Display Team, 1993. BR806. \$8.50.

This 16 cm by 4.5 cm sheet provides the markings,

including the new Slovak national insignia, for the White Albatross Display Team's L-29s. The main source was the drawings that appeared in SAFO. **Lithuanian Air Force 1993-94.** A 1/72 scale decal sheet for three aircraft of the recently restored Lietuvos Karo Aviacijai of independent Lithuania. BR807. \$6.95.

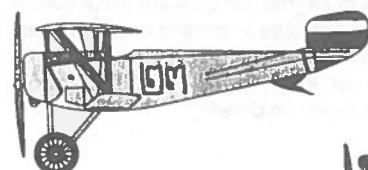
This 13 cm by 8 cm sheet provides markings for an Aero L-39 Albatros, a Mil Mi-8 Hip, and an Antonov An-2 Colt. The SAFO is identified as one of the sources for this sheet. (Good news: Blue Rider mentions that Revell will be releasing a 1/72-scale kit of the An-2. I wonder how many I will be able to afford?)

Ukrainian Air Force 1992-94. A 1/72 scale decal sheet featuring insignias and roundels for the aircraft of independent Ukraine in the post Soviet era. BR808. \$6.95.

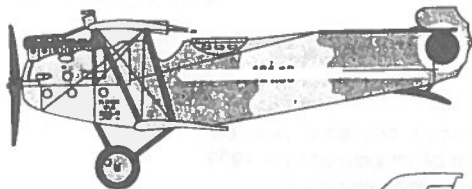
This 13 cm by 10 cm sheet is a slight departure for Blue Rider in that it does not cover any specific a/c, but, instead, provided a variety of national insignia, both roundels and shields, to be applied to Ukrainian a/c of your choice. You will have to do your own research on this one. Or, perhaps our Ukrainian friends can provide SAFO with schemes using this sheet. The instruction sheet includes what I hope is a preview of things to come: a drawing illustrating "Aircraft Insignia of the first period of Ukrainian independence 1917-20" with two insignia for the West Ukraine Republic, and 5 for the Ukraine Republic; one a Polish-like chessboard in what I assume would be blue and yellow. Wouldn't that look great on a model of a - what can it be used on?

Bordurian Fighter and Thomson's Tiger. CD-001. Under the label of Comic Designs, this 13.5 cm by 8.5 cm sheet seems to be based on a/c (Tiger Moth & Bf-109) of the fictitious Kingdom of Bordurian, which I assume is the subject of a series of children's books: "Read the whole thrilling tale in 'King Ottokar's Sceptre'". Obviously designed to attract youth into our hobby, we wish Blue Rider success in this venture. By the way, how about including color drawings on the instruction sheets for us older modelers?

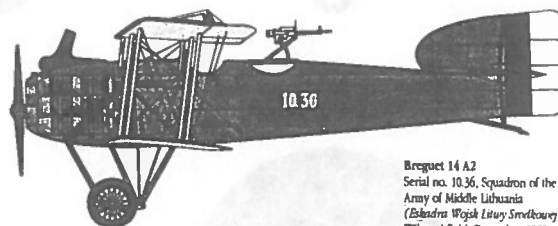
[Editor's Note: Blue Riders ad in the Spring 95 issue of Plastic Kit Constructor lists the following exciting new decals: "Austro-Hungarian 'Sworl' Fabric" £5.50 (can be used on Polish Albatross C.IIIs), "Lithuanian Fokker D.VII.s" £3.50, "WWI Belgian Air Force" £3.50 (Sopwith Strutter, Nieuport 11, Nieuport 16, & LVG C.VI), and "LVG C.VIs in post WWI civil use" £2.80].



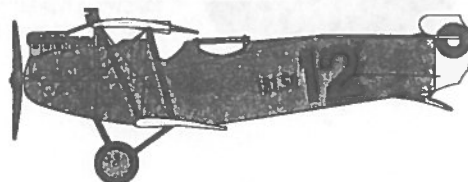
Nieuport 11
Royal Siamese Aeronautical Service, early 1920's.
From decal sheet BR231
Price £3.50
AVAILABLE NOVEMBER 1994



Phoenix C.I
Ljubljana Flying Squadron, Serb, Croat and Slovene
National Council Armed Forces, 1918.
From decal sheet BR230
Price £3.50
AVAILABLE NOVEMBER 1994



Breguet 14 A2
Serial no. 10.36, Squadron of the
Army of Middle Lithuania
(Baldra Wajak Litwy Środkowej),
Wilno airfield, December 1920.
From decal sheet BR405
Price £2.80
AVAILABLE NOVEMBER 1994



Phoenix C.I
Czechoslovak Air Force, 1921
From decal sheet BR406 - Price £2.50
AVAILABLE NOVEMBER 1994



Aero L-39 Albatros
Lithuanian Air Force, Blue 02, Mestkuchov Air Base, 1993/94.
From decal sheet BR807 - Price £2.80 AVAILABLE NOVEMBER 1994

NEWS FROM BLUE RIDER

It seems to have been a long time since we last talked, so I'll start off by quickly running through our programme from 1993 through 1995.

March 1993 saw the release of 1/72 decals in our New Europe series for the Croatian Air Force (BR802), Bosnian and Krajina Serb Air Forces (BR803) and Yugoslav Air Force (BR804). We released 1/72 scale kits of the Vickers FB5 (BRP21) and FB9 (BRP22), the FB5 featuring Danish markings. Also released was a 1/48 scale sheet for the Imperial Russian Air Force of WWI (BR507).

In November 1993 we released 1/72 scale kits of the Austrian Doblhoff WNF 342 V4 helicopter (BR112) and the UFAG C.I (BR117). In 1/72 and 1/48 scale we issued decal sheets of Samuel Kaye's SPAD XIII (BR222/508) and WWI AustroHungarian code numbers (BR224/509). Also in 1/72 scale was a sheet for the inter war Hungarian Air Force (BR223).

More New Europe decals were released in March 1994, these being for the Bosnian Presidency Air Force (BR805) and Slovak /Air Force (BR806). WWI decals were issued in 1/72 scale for Colorful Sopwith Camels (BR225), RFC Canada Jennies (BR226) and captured Allied aircraft in German colors (BR227). We also issued a colorful 1/72 sheet for a South African Air Force SE5a (BR302). Our 1/72 de Havilland DH9 was also reissued with RAF, Polish, Swiss, South African and Belgian markings (BR115).

In November 1994 we issued a large selection covering small air forces. Sheets covered the air forces of WWI Serbia (BR228), Siam in the 20s (BR231), Middle Lithuania in 1919/20 (BR405), Czechoslovakia (BR406), present day Lithuania (BR807) and Ukraine (BR808). We also issued a two part set covering the Carinthian Border War of 1918/19 featuring the Slav side's aircraft (BR229 and BR230).

Our March 1995 programme includes the following: Jasta 18 markings (BR232), German Fokker Dri's (BR233), a double sheet featuring Austro Hungarian Sworl fabric for the Albatros D.III (Oef), together with markings for the Dual Monarchy and Poland (BR234), Lithuanian Fokker DVI's (BR235) and the Belgian Air Force in WWI (BR236).

I've also got some bits of Small Air Force information to pass on to you and your readers.

Croatian Air Force 1993 Whilst on holiday in Istria in May/June 1993, a Croatian Mi8 MTV1 arrived in Rovinj to take the baroque church spire statue of St. Euphemia to Zagreb for renovation. With a military serial of H211, the

helicopter still bore civilian livery. I suspect that this could be an ex Aeroflot aircraft.

Croatian Air Force 1994 When I was at Pula airport in July 1994 I noted at least 12 MiG21 bis, at least one of which was a MiG21 UM. I was unable to get pictures, but they were camouflaged in Tan and Dark Green (similar to old East German MiGs, which possibly suggests their source). The new Croatian national insignia was carried on the rear fuselage and four wing positions. The Croatian shield was carried on the fin (See new Croatian insignia on next page). The Croatian Air Force is now also operating Mi24V gunships, according to pictures in a recent edition of Hrvatski Vojnik (Issue no. 76).

Serbian Aviation 1912-1918 This book, published in Belgrade in 1993, covers the creation of the Serb Air Force, its involvement in the Balkan Wars of 1912 and 1913, and its part in World War One. With 262 pages, over 300 black and white photos/drawings and an eight page color section featuring profiles of 31 aircraft, this book contains a wealth of information for the WWI aviation enthusiast. The text is in Cyrillic Serbian, but there is a 6 page precis section in French. Published by SKY/Eurosini S.R.L. Price around 30 DM in Belgrade.

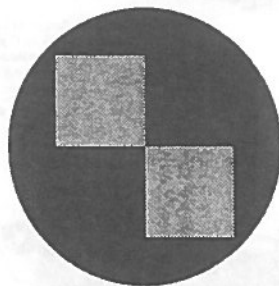
Wanted Information on aircraft and insignias for the following air forces, for possible inclusion on future decal sheets Albania (pre WW2 and post 1991), Armenia, Azerbaijan, Chechnya, Doston Gulbuddin Militia (Afghanistan), Kazakhstan, Krgyzstan, Macedonia, Tadjikistan, Turkmenistan. In fact, just about any information on Eastern European/former Soviet air forces would be welcomed by Blue Rider. Remember, if you want decals of these subjects, we are probably the only people who will produce them!

'Insignia' magazine In November 1995 Blue Rider intend to begin publication of a quarterly magazine for the world air force enthusiast, with the emphasis on aircraft markings. The magazine will be subscription only. Each issue will have 36 pages and will include a free decal sheet. If any SAFO members are interested in subscribing, could they please contact me at Blue Rider. I anticipate that the annual subscription will be around £20 sterling. If there is enough interest, the magazine could well go bimonthly in time. We would also be interested in any SAFO members willing to write/research articles for us.

Richard Humberstone (SAFCH #833), 43a Glasford Street, London SW17 9HL, England.



Mil Mi-8 MTV-1, Croatian Air Force (Hrvatsko ratno zrakoplovstvo), Serial No. H-211, 7th June, 1993, Rovinj, Croatia. This HRZ i PZO helicopter lifted the statue of St. Euphemia from the baroque church of the same name in Rovinj for restoration in Zagreb. Colours are white overall, with dark blue cockpit, fuselage stripe and cheat line, and light grey undersides and boom stripe. The exhaust panel is black, but there is also heavy staining from the exhaust on the fuselage (not shown on drawing).



The revised Croat insignia, two red squares on a blue circle, began to be introduced from 1993. This roundel has been observed on the following types: MiG-21bis, MiG-21UM, Mi-8 MTV-1 and Mi-24 V

NEWS FROM POLAND

1. The long rumored injection-molded kit of the PWS-26 is closer to realization with the recent release by RPM Models of its immediate predecessor - the PWS-16bis. This new company is specializing the Polish aircraft and have already have released kits of the PZL P-24G and PWS-10. Their PWS-16bis appears to be made from molds taken over from either ZTS Micro or PZW since this kit bears a close resemblance to the PZW PZL P-7a and ZTS TS-11 Iskra. The PWS-16bis kit consists 30+ white plastic parts plus 6 transparent parts. The main dimensions are spot on. The parts are cleanly molded although some of the smaller parts are rather crude with poor imitations of engine, propeller, and "N" struts. These parts are better replaced by items from Aeroclub, Contrails, etc. One of the two sprues has several parts removed which supports the information received from RPM that they will be releasing a PWS-26 and a PWS-26 with blind-flying hood in separate boxes. What was intended as a three-in-one kit is now transformed into the more fashionable (see Hasegawa, Fujimi, etc.) three separate kits. The main difference between the PWS-16bis and the PWS-26 are the undercarriage struts and wheels, upper shape of the cowl, plus one or two smaller differences. This will be clear to anybody when both kits are at hand. One strange point is that the sprue mentioned earlier has no part numbers molded on the tabs, while the other sprue has numbers, but they are different from those on the instruction sheet.

The decal sheet and instructions provide for three aircraft; two all silver civil machines and one olive-green PAF trainer. Serial numbers are provided to allow building any of the 20 original machines serialled 59-22 to 59-40. While the PWS logo is provided in both black and white, the "PWS 16bis"

inscription so prominent in white on the rudder above the chessboard on the olive drab military trainers is absent from the decal sheet. The box top art is the excellent work of J. Wrobel.

A beautiful model can be built from this kit by anyone who is willing to put in little extra work and use a few accessories. I am looking forward to the PWS-26.

2. Just before Christmas, injection-molded, 1/72-scale kits of the Su-22M4 Fitter K and Su-22UM-3K Fitter G were released by a new company known as Pantera. Generally, these kits are good in shape, not a easy task for these complex shapes, and quite similar to the Bilek/Italeri offer of these same types, although the latter has better smaller parts. The true advantage of these two kits is the price, less than half that of Italeri, and the superb decals by Techmod. For the Su-22MK, decals are provided for two Polish, an Iraqi, an East German, and an Afghan machine. For the Su-22VM-3K, decals are provided for two Polish, a Russian, a Ukrainian, and a Slovak machine. These sheets include not only code numbers and national insignia, but also precisely-printed regiment, squadron, and personal markings; sharkmouth; warning markings; and instrument panels.

Their next model was to be the Mi-2, but this has been abandoned, probably because one of the Czech companies will be releasing a Mi-2 this year. They are now working on a PZL-130 Orlik for release in the near future.

3. Hi Decal Line (HDL) has just released two interesting sheets: 72030 MiG-17 Fresco A and 72031 Su-17M4. The Mig-17 sheet covers 2 Soviet, Afghan, Mongol, DDR, & Iraq machines. The Su-17M4 sheet is devoted to 6 Soviet machines and has stenciling covering more than half the sheet. The Su-17 was used only by the USSR, but the export

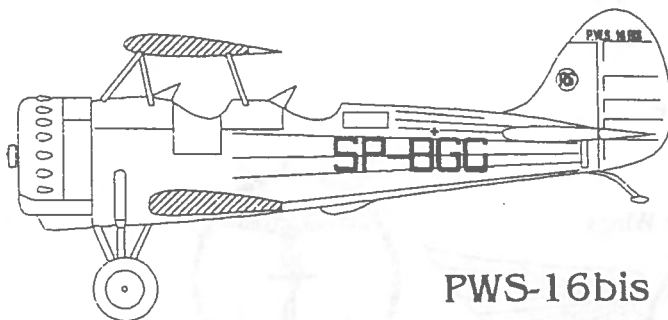
version, the Su-22, will be the subject of HLD's sheet 72033 scheduled for the near future.

4. Wydawnictwo Militaria has issued the second their "In-Action"-like series. This one, on the PZL P-24, is similar to the one on the Lublin R-XIII, in that it is the best single source on this type. The book contains over 90 photos; 50+ drawings, sketches, and diagrams; 4 pages of 1/48-scale drawings with cross sections; 20 color profiles; one color 1/72-scale 4-view drawing of Greek AF "delta" 102; and a dramatic front cover painting by J. Wrobel of a Greek P-24 chasing an Italian Fiat. This book indispensable for anyone interested in WWII, Polish, Greek, Bulgarian, Romanian, or Turkish Air Forces.

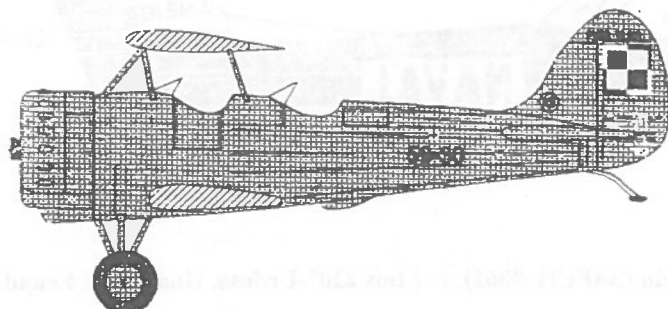
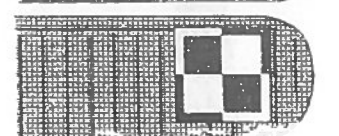
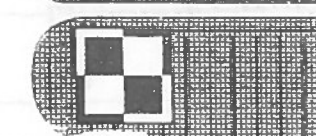
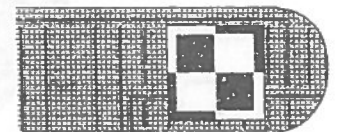
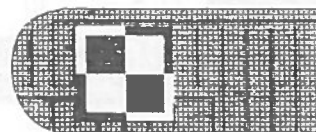
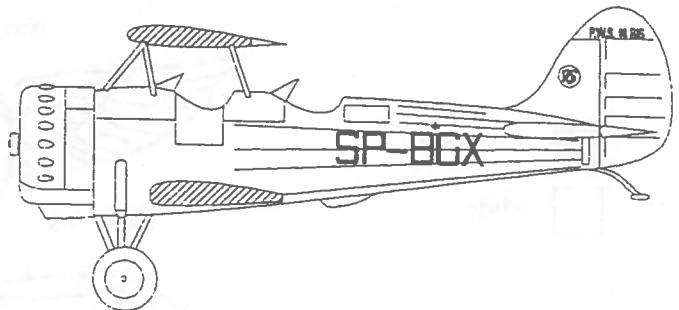
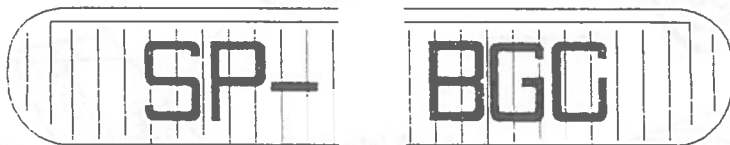
5. Ace Publication has released another in their series of "Aces of ...": "Aces of the 1914-18 War" is softbound and contains 42 pages, 40 color profiles, 8 color photos of restored aircraft, 40 b&w archive photos, and 9 tables listing the highest scoring aces in British, German, French, Polish (in Russian, Austro-Hungarian, & German service), Italian, Belgian, American, Russian, Austro-Hungarian Air Services.

6. Aeroplan 2/94 brings more on the air forces on the ex-Yugoslav countries; more on Polish Oef-fags; the history of one Polish Nieuports 24bis (the one with Diana with a bow); more on spying Spit-fires with 1/72-scale drawings and 13 color profiles; photos of the recording-breaking Su-27, alias P-42; PAF Szcze-2 and UT-2 with photos and color schemes; and two new departments: a modeling article on updating the kit of the PZL P-37 Los and a spotter column with two pages of color photos.

Wojciech Butrycz (SAFCH #981), ul. Aleksandry 25m167, 30-837 Krakow, Poland.



PWS-16bis



Air Force Pilot's Wings

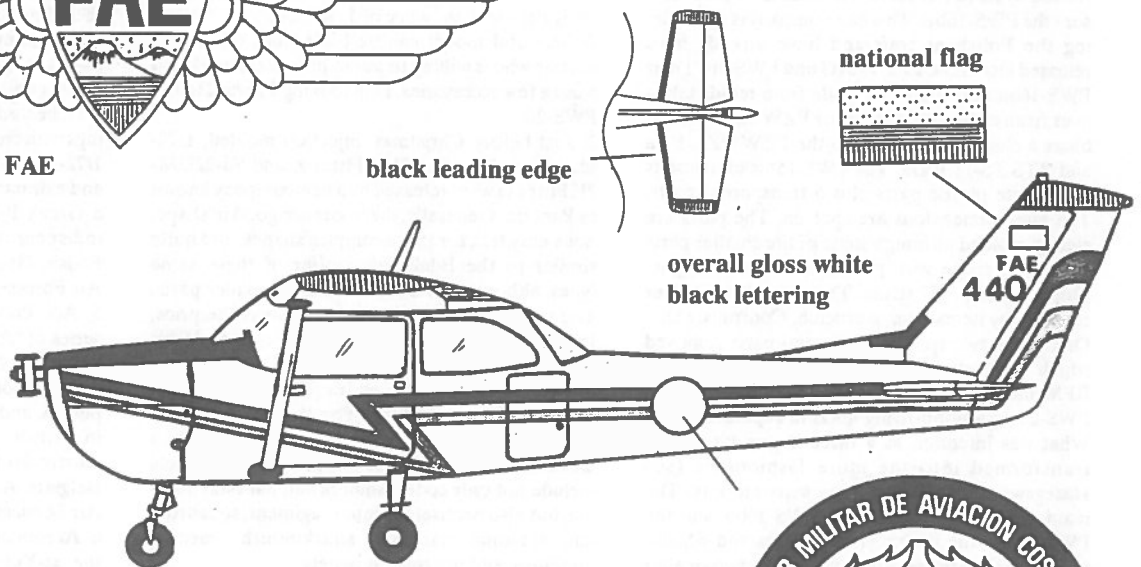
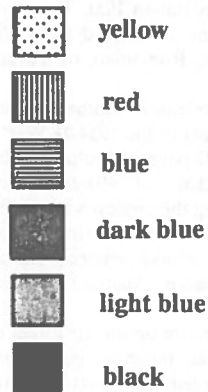


gold wing

black FAE

black leading edge

ECUADORIAN T-41



overall gloss white
black lettering

national flag

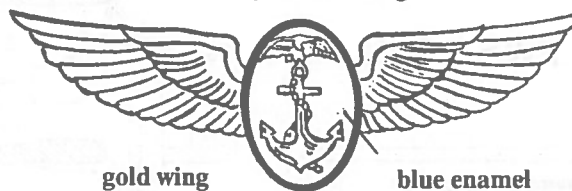
Air Force Academy Badge



At one time, the Ecuadorian Air Force used a large number of T-41. Now, there are few left; these being used in liaison roles at Air Bases throughout the country.

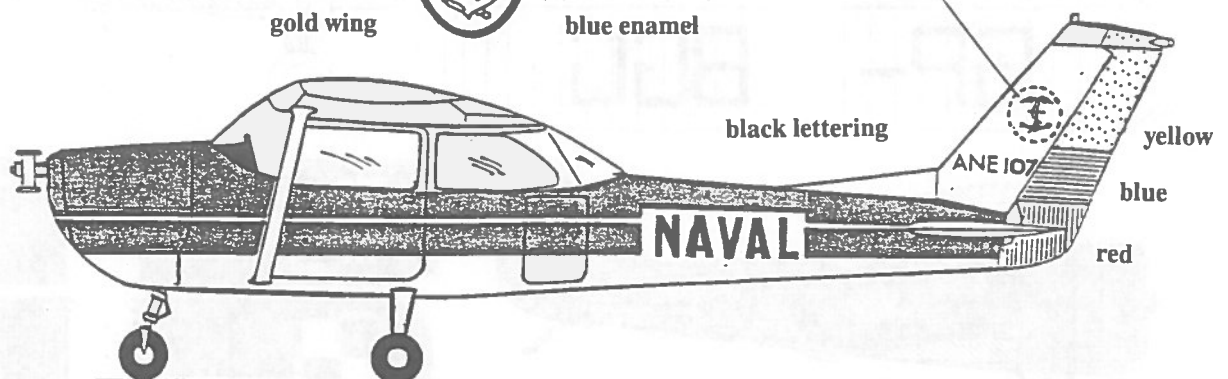
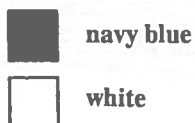
The Ecuadorian Navy operated three T-41. In 1974 when they were replaced by Beechcraft T-34C-1 in 1974. Serials were ANE-107, -205, & -206.

Navy Pilot's Wings



gold wing

blue enamel



black lettering

yellow

blue

red

white tips



Jorge Delgado (SAFCH #862), PO Box 2207-Urdesa, Guayaquil, Ecuador.

A FORGOTTEN ACE

Kim Margosein and Stephen Boshniakov

[Authors' note: Very little information is available in the West about the Bulgarian Air Force in WWII. Now, with closer ties being established between the West and the nations of the former Warsaw Pact, hopefully this void will be filled. The following is a small contribution to this cause.]

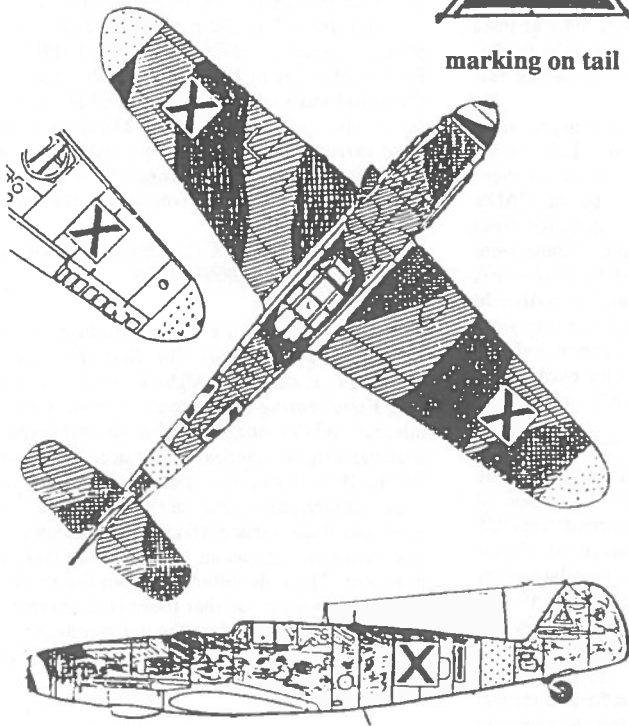
[Translator's note: During WWII, the Bulgarian Air Force assigned point values to each type of aircraft shot down. The word "points" is my own use. The English translation of the word used in Mr. Boshniakov's letters seems to be "victories". However, I will use the term "points" to avoid confusion.]

The top Bulgarian ace in WWII was Major General (ret) Stoyan Stoyanov, with a total of 15 points. Born in 1912, Gen. Stoyanov studied six years in a seminary before attending military college. At the time he scored his aerial victories, he held the rank of 1st Lieutenant and was a squadron commander. He scored three victories against B-24s over Sofia (3 pts each) and three against P-38s (2 pts each). As far as is know, all victories were scored from his Me 109-G6.

1 August 11943	2 B-24s
10 January 1944	2 P38s
24 June 1944	1 B-24
26 August 19441	P-38



marking on tail



During WWII, Bulgaria remained scrupulously neutral in the conflict between Germany and the USSR and there was no fighting between Bulgarian and Soviet forces. Except for anti-partisan fighting in occupied Greece and Yugoslavia, the only action the Bulgarian AF saw was against American bombers and their escorts. Bulgaria was absorbed into the Soviet sphere of influence after the war and this may be why Stoyanov did not receive more recognition. After WWII, he remained in the Bulgarian Air Force, until he retired as a Major General.

I am enclosing a drawing of his aircraft derived from a Bulgarian decal sheet. The '7' is red with a white outline, as per German practice. The triangle on the fin is unique to Bulgarian aircraft. The decal sheet is not quite legible, so my interpretation may be inaccurate. The upper letter is the aircraft's place in the unit, and the lower number the unit number.

A 1/72scale decal sheet with this aircraft, two other Bulgarian Me109Gs, and a Letov 328 is available from Stephen Boshniakov, PO Box 48, 1184 Sofia, Bulgaria. He corresponds in English, and is interested in the Pacific Theater of WWII.

Kim Margosein (SAFCH #104), 2813 192 ST., Lansing, IL 60438, USA.



dunklegrun 71



mittlegrau 75 blotches



hellblau 76



schwarzgrun 70



yellow



black



A BULGARIAN ALBATROS

Kim Margosein and Stephen Boshniakov

During WWI, Bulgaria maintained an air arm supplied by the other axis powers. One of their aircraft was the Albatros CIII shown. Judging from the photograph, the colors seemed to be the early varnished linen. Note the cross on the upper surface of the lower wing, next to the fuselage. Also, note the handpainted look of the cross on the fuselage. Bulgarian aircraft also maintained the recognition feature of the narrow green stripe alone

the trailing edge of the upper wing. This aircraft has something inscribed (it looked like it was simply written on) on the forward fuselage on the right side. Our best guess is that it says "old man" in Bulgarian.

Kim Margosein (SAFCH #104), 2813 192 St., Lansing, IL 60438, USA.

"Having just read SAFO #72, I decided to jot off a few lines regarding three of the articles in this issue, as they relate to my presently ongoing project, a definitive book on the North American NA16, AT6, and SNJ Texan and Harvard series in Latin America.

"My good friend, Santiago Flores, is to be congratulated for his article entitled "The T6 Mexican Dive-Bomber," in which I know he has invested considerable research time. However, some information came into my hands only after Santiago sent the manuscript to you, that I think may have some bearing on the markings of Major Noriega's aircraft (and those of his unit) at the time of the attack. It is known that the first six AT6B's received by the FAM under LendLease were USAAC serial numbers 4117428 through 4117433 (by the way, the 'official' LendLease handover date for these, apparently when the Mexican crews took delivery of them in the U.S., was 9 June 1942). The next increment of Texans received by Mexico were four AT6C's turned over on 16 July 1942, so it can be safely assumed that the only Texans that could have carried out the attack were from the first (and only) lot of AT6B's. A lineup photo of these six AT6B's appeared in Western Flying magazine for June 1944, and clearly shows factoryfresh aircraft in overall natural metal, with FAM rudder stripes, no national insignia on the fuselage, and the Mexican triangle national insignia in all four wing positions. The antiglare panel was painted clear from the leading edge of the cowl to the windscreen but, most importantly, the individual US serial numbers (in about 9 to 12 inch black numerals) were abbreviated as '117429', '117431', etc on the lower rear fuselage with the aft most two digits extending under the horizontal stabilizer. The US attempted to deliver token numbers of armed AT6B's to all LendLease-eligible air arms (usually four to six aircraft) and all of them were similarly painted, i.e., no olive drab upper surfaces; only natural metal overall with appropriate national markings and US serials as per the Mexican example, at least initially. I will grant that it is possible that the six FAM AT6B's were camouflaged between the time of delivery (17 June) and the date of the attack (7 July), but I think this most unlikely. However, these and some of the AT6C's were clearly camouflaged later on at some point, apparently with Mexican produced paints. Although I have not finished all of the LendLease records as yet, the markings of the aircraft for Latin America (all AT6's of which were new aircraft, direct from the factory) were specified by the host Government, in conjunction with what the US could afford to let industry do at the time.

"I was very interested in Jorge Delgado's sideview drawings of "AT6 Latinos", and while I have only a few problems with his drawings and markings, which are very good, there are some problems with the actual designations. Starting with Bolivian FAB 369 at upper left, the correct presentation of the type would be T6G (the 'A' for advanced had been dropped by the time the T6G's were entering service). This aircraft, by the way, is now back in the U.S. as N1284 but has a rather suspect 'identification number', given as '12463' which could be a corruption of Navy BuA 112463 (an SNJ6), except for the fact that this BuA number was amongst a batch of 169 aircraft cancelled and not delivered! Otherwise, the number bears no relationship to any known USAAF, USAF, USN, or North American serial or constructors number! Bolivia did get 18 SNJ6B's (and two SNJ5C's) which are markedly similar to the T6G, and I suspect this is, in fact, one

of these aircraft.

"Although often quoted as a T6G, Brazilian FAB 1471 (the next aircraft to the right) was in fact one of 100 mixed AT6A, B, C and D variants supplied to Brazil from 14 April 1947 that had been all brought up to AT6D 'Standard' (the exact way they were described in Rio Pact/MDAP records). Some of these aircraft were later modified incountry by the FAB, but none were truly T6G's.

"Paraguayan serial 0117 most certainly is not an AT6G. So far as I am aware, Paraguay received no true T6G's. Serial 0117 was amongst a batch of exSouth African Air Force Harvard IIA's that Paraguay acquired in September 1975.

"Chilean serial 273 and Honduran serial 211 were both, of course, T6G's (and not AT6G's).

"I think there must be something wrong with Argentine Naval 2G104/104 and the date given, 1950. I am not aware of any SNJ5C bearing 2G104 (although 4G104 is wellknown), and the first SNJ5's did not reach Argentina until 1958 according to my information. ARA Independencia was not commissioned until 1959!

"Colombia is not known to have received any T6G's, and FAC 777 shown is almost certainly one of the 30 T6D 'Standard' aircraft acquired under Reimbursable Aid Program (RAP). Readers should recall that the USAF dropped the 'A' (for 'Advanced') trainer prefix from 'AT' type aircraft designations in 1948, and all such aircraft remaining in the inventory (as well as BT's and PT's) became merely T6's, etc. It is also of interest to note that FAC777 crashed on 9 January 1965 at Pista Neiva, Colombia, and thus it seems very likely that the aircraft illustrated is the second use of this unique serial.

"The next aircraft illustrated, Dominican serial 1058, seems unlikely to have been a T6G, as the FAD is not known to have received any of these under MDAP. The vast majority of the FAD's Texans were AT6C's and AT6D's acquired from civilian sources and, although some of these were brought up to 'T6G-like standard' by 1962, yours truly examined some of these at San Isidro Airfield in 1965 and can assure one and all that they were not T6G's. I should add that I think it most unlikely that the old style Dominican rudder marks were still in service on FAD T6's by 1972; none of the T6's I saw in 1965 still had these.

"The next aircraft, Ecuadorean TB310/20310, is something of a puzzle. The FAE has, for some years, used the very convenient convention of presenting at least a portion of an aircraft 'real' US serial number on the fin as its own serial. Unfortunately, however, '20310' does not translate to any known T6G serial! Furthermore, I have a color photo of this aircraft taken in January 1972 which clearly shows it with a AT6C/D style canopy. Another photo, taken January 1979, however, shows it with a T6G canopy! Ecuador did receive six T6G's starting in April 1953, but the serial on this airplane is a mystery.

"No problem with FAU T6G serial 370 as shown, but readers might like to know that this same aircraft was later camouflaged and, somewhat contrary to what Jorge reported, the last FAU T6 (FAU 372) was wrecked on 19 January 1993, making it, I believe, the very last operational T6 in Latin America, with the possible exception of Paraguayan '1' and '2' mentioned by friend Tony Sapienza (see below). The last time I saw Venezuelan T6G E71 that Jorge illustrates, she had a yellow prop spinner and a tall radio mast just ahead of the ADF loop on the upper rear fuselage, also painted red. She also, oddly, had an AT6C/D

style canopy section over the rear cockpit opening area, but a T6G canopy over the pilots position!

"Finally, the Uruguayan Navy aircraft illustrated, s/n 256, has been variously reported as an ex-Argentine Navy SNJ5C or SNJ6. However, the presence of the forward radio mast seems to suggest to me that this may, in fact, have been one of the much earlier SNJ4's that Argentina also operated; I can't imagine why Argentine would cede relatively 'new' SNJ5C/6's to Uruguay when many older SNJ4's, which were getting long in the tooth, were available.

"Readers should also note that Jorge apparently used a basic T6G outline for all of his sideviews, and that these are at variance with earlier models of the 'Texan' in minor respects, especially the canopy framing, which is one of the key recognition factors. Others included (but were not necessarily definitive, as many aircraft were retrofitted and had odd bits and pieces added from time to time) the presence or addition of a prop spinner, the same for an ADF loop on the upper rear fuselage, and the small rectangular access panel on top of the fuselage just aft of the ADF loop. Other details were more difficult to identify, but included panel line variations, size and shape of the cowling, etc.

"Tony Sapienza's excellent article on the Grupo Aereo de Instruccion of the FAP brought a bit of an anomaly to the surface, however. He cites the two T6's/Harvard IIA's remaining in service to include '1' which he says was formerly s/n 0119. However, this aircraft was one of 12 exFAP aircraft sold into the US in February 1991, and I have a photo of its carcass taken in the US as 0119! I have FAP 0119 as having been SAAF 7229, so perhaps this serial was used more than once? His data on the first batch of FAP Aerotec T23's also seems to be at variance with previously published information, which included c/n's 104 and 105 for Paraguay. Perhaps one of our Brazilian readers can expand on this."

Dan Hagedorn (SAFCH #394), PO Box 682, Centreville, VA 220200682, USA.

"Included with this letter is a photo taken from a video of a documentary film that appeared on Dutch TV. It shows an Afghani Air Force Mi-17 over Kabul during the summer of 1994. It should interest SAFO readers that this aircraft carries a national insignia identical to that used by the AAF before 1979 (tricolored triangle on white disk). Unfortunately, the quality of the photo is not very good, but these same markings are seen on other AAF aircraft, such as an Mi-24 and an Antonov transport. The only difference from the pre-1979 markings seems to be that there is no Arabic inscription as was carried on the old markings." Calsyn Frans (SAFCH #854), Oude Staatsbaan 21, B-9991 Maldegem-Adegem, Belgium.

"Thank you for the fine review you provided, in Vol 18 No 4, on our publication, Military Transports in Detail. You provided an excellent overview of each section of our book. We are glad that our publication may be filling a void in the small air forces data base and look forward to continuing to produce books that may meet your clientele's requirements. "We would like to call your attention to the fact that your review understated the number of profiles presented in the publication, stating 50 when the actual count is 80. In addition, we were surprised that no mention was made of the fact that we are providing FS equivalents for all the colors presented in the profiles and pictures. We will

consider your 'nit pick' but would like to point out that most profiles presented in other publications use shadow shading which we found to be difficult to interpret hence our approach was to use distinctive patterns for each color. Regardless, we were very pleased by your review and hope it will significantly increase our sales which, to date, have been slower than we would like.

"We would be interested in hearing from your members on esoteric marking data for transport aircraft users we have identified but cannot document in sufficient detail to support the development of a profile. Our goal is to attempt to document as many unique markings as possible for each transport aircraft we incorporate in a volume."

Richard Staszak and Nancy Staehr, Air Transport Publications, PO Box 586073, Oceanside, CA 92058-6073.

"New National Insignia Update: In SAFO #67, Peter Batuev's drawing of the 'swept' flag on the Azerbaijan Government Tu-134 is correct, but quite certainly not the enlarged roundel: the proportions should be equal as in the flag. It would be interesting to know if roundels were also carried on the wings. As the Azerbaijani and Turkish lan-

guages are related, perhaps it is possible to see on the original photo an accent above the 'G' in the inscription 'AZARBAYGAN'. Also, what is written on the port side?

"Latvia has introduced a new national insignia in the brownish-red and white of their flag: a flag on the tail and roundels in the same proportions and colors as the flag."

Fritz Braun (SAFCH #220), Posener Strasse 20, D-81929 Munchen, Germany.

[Editor's Note: Fritz is recovering from a lengthy illness and it's good to have him active again.]

[Editor's Note: SAFCH member Seth Gaines is currently studying in France and he would like to share the following comments with us.]

"An article in the 24 March issue of 'La Provençal' announces a \$235 million contract with the United Arab Emirates for Eurocopter to deliver 7 Panther helicopters for anti-sub usage, modernise the 7 Super Pumas already in use, and deliver 5 Cougars. The Emirates decided to buy anti-sub helicopters after the Russian sale of subs to Iran. The choice of the Eurocopter was explained by the price offered and because the pilots are already trained to operate Eurocopters.

"An article in the same newspaper on 30 March

reported that the Turkish order of 20 Cougar transport helicopters, placed with Eurocopter in late 1993, is shortly to be fulfilled. Deliveries will take place at a rate of 2 per month and should be completed in the first half of 1996. (I am amazed at the slowness of these deliveries. Does it really take that long to make a helicopter? Do the Turks get a discount for the amazingly slow delivery? What are they going to do with so few helicopters until they get them all?) The contract is for \$235 million and the helicopters will be delivered without armament. Performance is claimed to allow the transport of 25 troops over a range of 800 km (500 miles).

"On French TV, I saw an Mi-8 which belonged to the Japanese 'Sarin Cult'. It appears to be all white, but because of several covering tarps, I couldn't see any markings or armament. It boggles the mind how anyone could smuggle such a huge thing into Japan. It may have been the cult's intention to use the 'Hip' to spray Sarin over populated areas. A frightening thought!"

Seth Gaines (SAFCH #1027), 8537 Hatton St., Houston, TX 77025, USA.

THE THIRD CATALAN WOMAN PILOT FOR THE SPANISH REPUBLIC:

Raimonda ELIES Marca

Arcadi DUNJO Berta,

[Editor's Note: An article by Tom Sarbaugh on Catalan women pilots appeared in SAFO #42.]

"This is the history which I remember: Raimonda ELIES Marca was a native of Arbeka (Province of Lleida (Lerida in Spanish)), an agricultural zone rich in olives. She was the oldest daughter of a merchant, and she moved to Barcelona to continue her studies for school principal, lodging in the Catalanian Generalitat (Government) Residence for Women Students from 193036.

"Her interest in aviation caused her to frequent the motorless flying clubs which were formed in Barcelona during this epoch, among them the Aero Club of Catalonia, the Aero Club of Sabadell, the Falcons of Palestra, the Popular Aero Club, and the Federation of Alumni of the School of Labor (FAEET). All of these organizations had courses with German sailplanes such as the Anfangers, Zoogling, Esge, and the Spanish CYPA, besides sailplane trainers like the Falke and the SpenlaD in the School of Monflorite (Province of Huesca).

"Almost all of the sailplanes were built from German plans by the club members themselves, which also facilitated repairs. In her free time, Raimonda frequented all of the clubs and assisted in the construction. She flew on weekends and participated in the annual "Weeks of Motorless Flight", during which she obtained her "A" and "B" licenses at the airfields of Puigcerda, Montseny, and Sabadell in towed flights. The final week was held at Montflorite in 1935.

She had a great enthusiasm for all things aeronautic, and was wellknown in this atmosphere for her simplicity, fellow-feeling, love of study, and assistance at technical conferences and flying courses from 193036.

"Raimonda was forced to change course because of the Civil War, and because of her school-principal specialty she joined the Infant Aid Organization for refugee school children dis-

placed by the war. In a group of English Quakers (Religious Society of Friends) providing humanitarian aid, she took charge of numerous school children.

"First she conducted them to safety in France, but when the Germans invaded in 1940, they sought refuge in England. There Raimonda remained throughout the war, and continued her residence for some years afterward.

"I have not had contact with her since. But her memory persists in those of us who still remain from childhood years of illusions and free camaraderie." 27 January 1994

[Translator's Note: Arcadi Dunjo, now 82, is a native of Barcelona and an alumni of the Escuela Tecnica de Barcelona (the Catalan equivalent of Cal Tech or Georgia Tech). During the Spanish Civil War, he was an aircraft constructor and mechanic for the Republican Air Forces. He not only built and repaired Polikarpov I15 Chats, but converted them for night fighting.

In February 1939, Dunjo went into exile in France, passing through several concentration camps. He was released in July 1939, to join the technical offices of Dewoitine in Toulouse as an aviation draughtsman.

When the Germans invaded Vichy France following the Allied landings of "Operation Torch" in North Africa during November 1942, Dewoitine's directors decided to move the construction of the D520 fighter to French Morocco. But the rapidity of the German advance precluded the transfer.

To avoid deportation, either to forced labor for the Third Reich or to imprisonment in a Nazi concentration camp, Dunjo returned clandestinely over the Pyrenees to Barcelona. He worked there constructing bicycles and, later, motorcycles and sidecars. After his retirement, he was retroactively promoted to Captain of Aviation (Retired) in the Spanish Air Force.

Dunjo led the team which built the replica Polikarpov I-15 Chato now displayed in the air museum at Cuatro Vientos (near Madrid).

For his great labors from 1934 onwards as a builder and pilot of sailplanes, as a mechanic during the Civil War, as a worker at Dewoitine, and as an artisan of the Chato, he was awarded the Cross of Aeronautical Merit by the Spanish Ministry of Defense on 28 February 1991.

Besides continuing to pilot sailplanes, to build model aircraft, and to do aviation research, Dunjo has two major projects. He is building the wings for a replica Morane Type "H" of 1913, the forerunner of the famous Fokker E.III Ein-decker. And, with other Catalan aviation enthusiasts, he is helping to found an aerospace museum at Prat International Airport, near Barcelona.]

Translated by Tom Sarbaugh (SAFCH #497), #450
Boynton Avenue, Berkeley, CA 947071702.



Catalan woman pilot Raimonda ELLES Marca in front of Spanish sailplane CYPA, 1934.
(via Arcadi DUNJO Berta)



Catalan women pilots Raimonda ELLES Marca (left) and Delors VIVES Rodon with a German 'Spenla D' sailplane, 1935.
(via Arcadi DUNJO Berta)



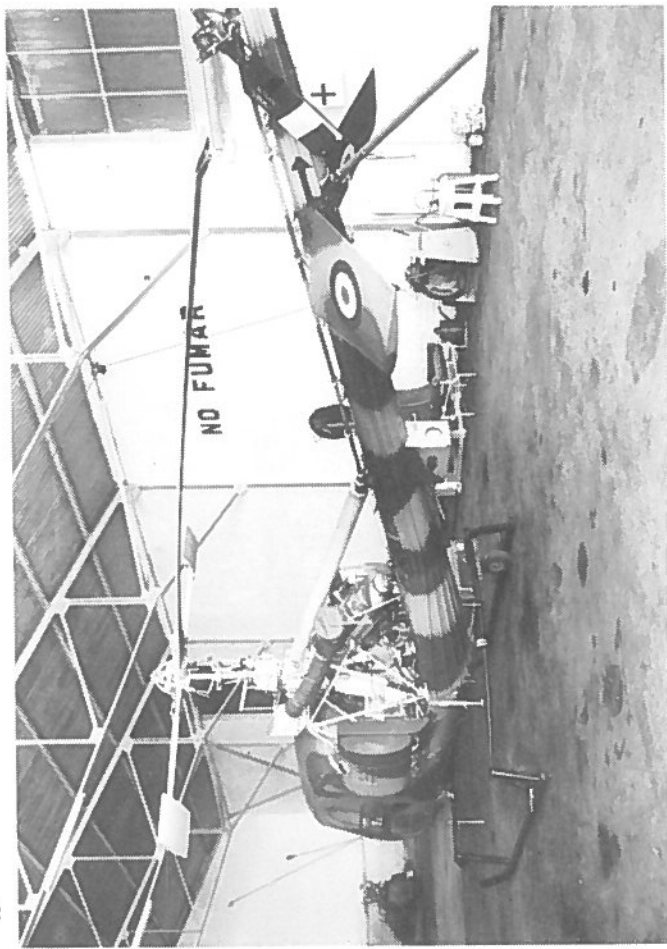
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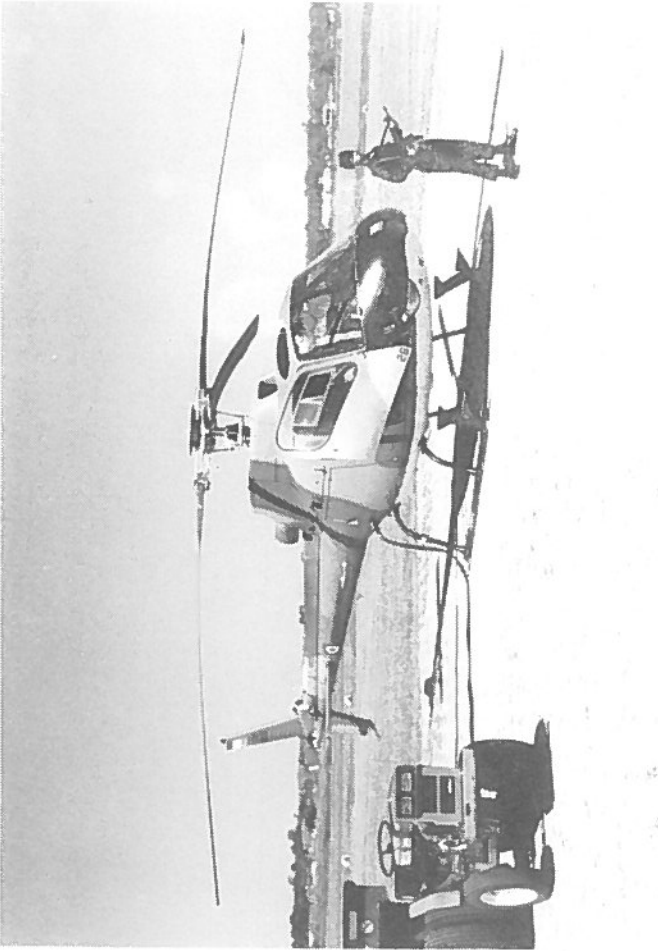
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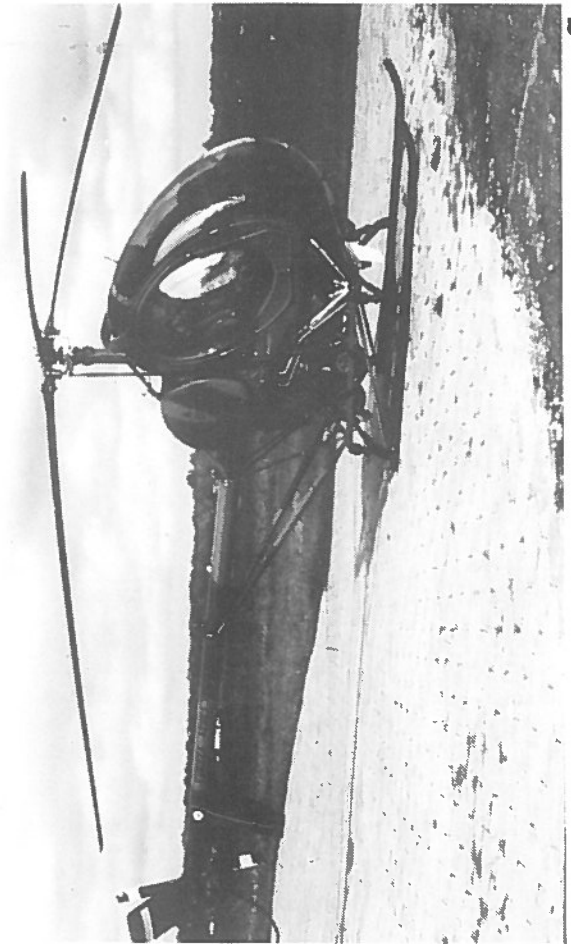
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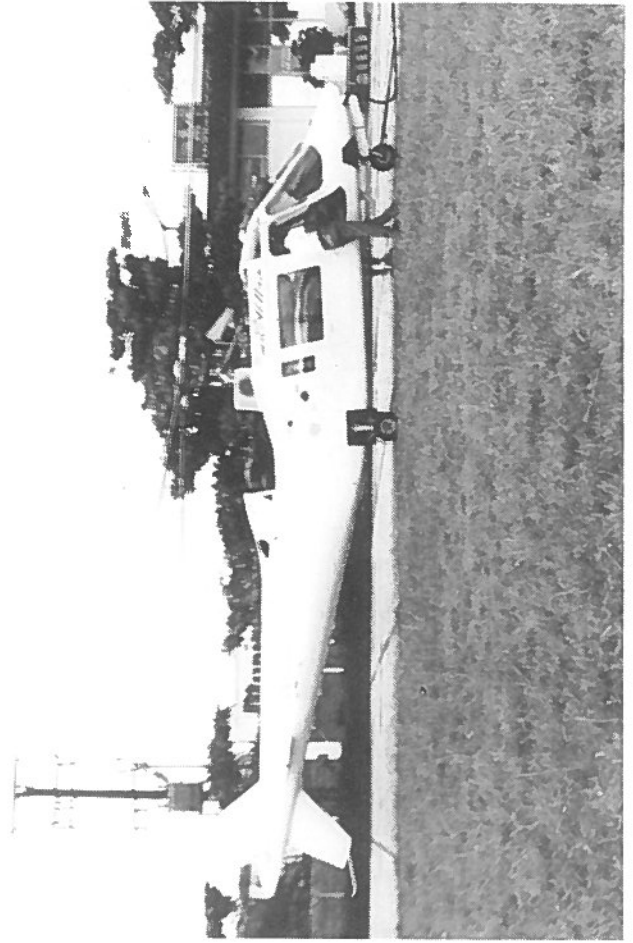
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